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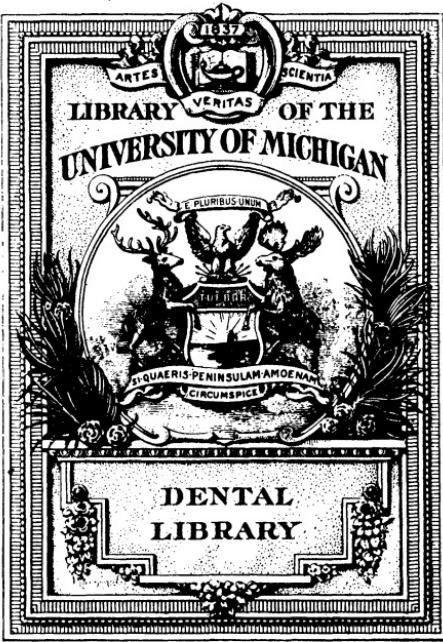
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Listerine Tooth Powder

Tooth powders have long been empirically employed, chiefly as a mechanical agent for cleansing the teeth, and with little regard to their composition or chemical action. Many of the articles sold for this purpose contain ingredients prone to fermentative action in the mouth, such as orris root, starch, sugar, etc., and, in addition, pumice stone, cuttlefish bone, or other harmfully abrasive substances.

Listerine Tooth Powder, possessing neither of these objectionable qualities, very acceptably meets all the requirements of a frictionary dentifrice, and promises to give much satisfaction to those who employ it, in conjunction with a mouth-wash of Listerine, suitably diluted.

To dental practitioners of record, the manufacturers will be pleased to send a supply of samples of Listerine Tooth Powder for distribution to patients.

**Lambert Pharmacal Co.
Saint Louis**

OUR POST GRADUATE COURSE

OPERATIVE DENTISTRY.

BY R. B. TULLER, D. D. S.

THE DITTMAR METHOD OF MAKING A CAST GOLD-SHELL CROWN.

A band of 34 ga. 24-k. gold is made and accurately fitted to the prepared root in the usual way. Thirty-four ga. pure gold is used because it is thin enough and soft enough to be most accurately modeled to the form of the root and this is extremely important. If the stump has been trimmed up to a slight taper, as it should be, the 34 ga. gold will stretch a little and thus hug the root beneath the gum margins as close as can be.

This band is now slitted down the sides in numerous places equal in depth, so that when the divisions are turned in to the center, lapping one over the other at that point, the top is closed. Or if preferred the band may be capped by soldering on a flat piece at the right height to allow for the addition of occlusal thickness and cusps. With this now accurately adjusted to the stump, add on to the top enough modelling compound to get a good bite, together with contact of approximating teeth. The crown should come away with the modelling wax, then fitted exactly in place. If not, it must be removed from the stump and carefully adjusted in the compound.

Now, this shell should be filled up with the silicate casting investment and the rest with plaster as usual in making up articulating models. Having secured articulating models, soften and remove the modelling compound and then with a small brush oil the plaster margin in around the crown, also the sides of approximating teeth.

The next step, after gold is entirely clean, is to build up a top and lateral contour with Taggart or other suitable inlay wax. This is readily done by having the wax melted in a little dish and applying it with a fine camel's hair brush to the thickness desired on all sides and on top of the gold. Then by closing the articulator with the wax warmed the impress or bite is made of the occluding teeth,

and the necessary carving and occlusal shaping up may be done; also the contouring on all sides, painting on more wax or trimming away and smoothing and polishing up until a perfect tooth model is formed over the gold shell. None of the wax should impinge on the plaster. The oil is applied to prevent the wax that may accidentally touch the plaster from sticking.

Now the adjoining teeth may be broken away, leaving the crown model standing alone. The approximal surfaces should now be painted with a thin layer of wax to insure correct contact after finishing the gold. If this is not done the crown might be a little too narrow approximally. It is better to have too much than too little.

Now the smoother our model is finished up and polished the better the cast will be. The model can now be sawed off from the plaster and is ready for investment after inserting the sprue at the most available point. Of course the shell remains in the mold and the molten gold takes the place of the disappearing wax.

When this crown is finished, it is about as perfect as can be made, having a very thin edge to pass between the gum margin with gradually thickening walls to and including the occlusal portion. Twenty-two carat gold should be used for the casting, as it is harder and more durable.

A crown made in this way contains a good deal more gold than a shell crown made of plate in the old way, it is worth more intrinsically, artistically and every other way, and a good price should be charged for it.

For bridge supports they are far superior in strength to the old style shell crowns that being thin-plate yield more or less under stress. Any cast crowns are superior in this respect. There is no springing and yielding in the heavy work that may be put upon them. Such a weakness in the usual shell crown has been the cause of many a failure in bridge work; and beside that, the lack of close adaptation to the shape of the root, which can be secured in this way.

BACTERIOLOGY AND PATHOLOGY.

BY GEORGE W. COOK, B. S., D. D. S., CHICAGO, ILL., DEAN OF DENTAL
DEPARTMENT, UNIVERSITY OF ILLINOIS; PROFESSOR OF BAC-
TERIOLOGY, UNIVERSITY OF ILLINOIS.

We have previously stated that fermentation, as we at the present understand the term, means the action of certain ferment on some fermentable substances, or a compound that is able to be converted into aldehydes, acids or alcohols. We have practically the same process manifesting itself in substances rich in proteids. In fermentation we have the breaking up of carbohydrates. In putrefaction we have the breaking up of proteids, or, in other words, the nitrogenous compounds. When such actions take place in the organic world one reaction, as in the case of fermentation, is produced by a certain class of micro-organisms that we call organisms of fermentation. In the action of the breaking up of proteids we have a class of organisms that we call putrefactive or saprophytic organisms. This last named class has an extensive group of organisms that seem to be capable of producing putrefaction in dead nitrogenous compounds. Many of these are facultative anaerobic bacteria and can only produce this putrefactive process when in the absence of the free oxygen of the air.

In the study of the fundamental principles of bacterial life we must consider some of the important decomposition processes as they appear in general. We wish to define some of the more common terms that are used in the general fundamental principles in the decomposition of proteids and in this I can do no better than to reiterate some of my former statements in regard to the matter. We understand that putrefaction takes place in dead nitrogenous substance, and when we say dead nitrogenous substance we apply this term more to animal tissue. When we speak of dead animal tissues, we speak of tissue after its functional activities of the tissue have completely come to a standstill, so far as its irritability is concerned. It can no longer respond to the conditions that we consider constitutes a living process.

The role played in pathological changes of tissue by certain putrefactive processes is one that has been studied extensively by such investigators as Pasteur, Baumann, Brieger, Nenchi, Salkowski and

a great many others that would be unnecessary to mention here. It was Pasteur who first advanced the theory that putrefaction could not take place by bacteria in the presence of the free oxygen of the air. This theory was later supported by the investigations of Nenchi, Bovert, Kerry and Bienstock. The last named investigators further claimed that this process was only carried on by a particular class of bacteria called anaerobic. However, further observations were made that facultative aerobes could under most circumstances initiate putrefactive changes in dead organic substance, especially substances that are rich in proteids. In 1897-8 I made some observations upon this question, with reference to certain bacteria that usually manifest themselves as putrefactive bacteria in the human oral cavity. I might say here that these investigations were not so very satisfactory and the work was laid aside at that time until the publication of some work in 1903 by Rettger. In his published works he gave some technique that seemed would assist in the determination of certain putrefactive products in such material as egg albumen and lean meat. Again returning to my work on this question, I used some facultative aerobic bacteria, isolated from the oral cavity, and especially one organism that I isolated from a putrescent pulp proved to be the bacillus putrificus or the bacillus cadaverous. This organism is usually classified as a facultative saprophyte. It can under ordinary circumstances live as a parasite, but under certain conditions it is capable of breaking up dead organic substance and living purely as a saprophytic organism.

In order that we may more thoroughly understand the terms oxidation and hydrolysis we will define them. Oxidation, as we usually use the term in putrefaction, is a process in which the decomposition of the proteid molecule is carried on by liberating oxygen in the decomposing mass. The intermediate products are more or less complexed oxyacids. The oxidation of tissue, like putrefaction, attacks the nuclei even though it is in contact with living substance, while on the other hand hydrolysis in this same process simply splits up the main molecule by liberating a molecule of water, leaving the nuclei intact.

Many bacteria can hydrolyze proteids and cause the liquefaction of gelatine and blood serum. In such cases they split off carbon dioxide from the amino acids, which is an acid group, and for a time

leave the nucleus floating around in a liquid mass. Lycins and ornithin are usually acid in reaction. In such processes certain bases are oftentimes designated as products of putrefaction (monoamino acids). Cadaverin and putrescin are classed among the hydrolyzing compounds and are usually found in all putrefactive processes where the presence of complexed proteid molecules are hydrolyzed by the action of bacteria.

In the physiological activity of the cellular substance of tissue we have hydrolysis and oxidation going on together in the body. The products of such processes are carbon dioxide and water, and the intermediate products which oftentimes do not leave the body for some little time after their formation are usually called leucotamins. These last named substances are analogous to the ptomaines that are produced by oxidation and hydrolysis in dead organic substance, as by bacteria. In the synthetic building up of the proteid molecule we have dehydration of the nuclei by a sort of a hydrolytic process. In this group is formed an OH, which in living physiological tissue must always remain as an OH group, and can always be detected there by Millon's reaction. In the decomposition of this group by bacterial action, in the majority of instances there is present a phenol which is split off from tyrosin. It will be remembered in this connection that a proteid molecule is amphoteric, in other words, the compound is slightly basic and slightly acid and under some circumstances will give an acid reaction, while under other circumstances they manifest themselves as a base. It has been discovered by a number of investigators that an organic substance is better explained by hydrolysis than by oxidation.

In order that we might study the putrefactive changes that take place by certain forms of bacteria in tissue we obtained animal teeth and removed the pulps, under as nearly aseptic conditions as possible, and undertook the decomposition of this material by the action of bacteria. Five and ten grams, respectively, of this pulp tissue were obtained and placed in test tubes that had been thoroughly sterilized, and after a slow process of fractional sterilization we inoculated these tubes with various forms of bacteria; sterile capillary glass tubes were placed in the culture tubes leading into other vessels where the various gases were collected, and examined to see as nearly as possible what gases might be given off from this putrefactive process. And

I will say here that some of these tubes were placed under anaerobic conditions for bacterial growth, while others were used as aerobic cultures. In the aerobic tubes we had great difficulty in determining that putrefaction would occur except at the bottom of the mass. To give in detail the reactions that occurred in the anaerobic tubes would consume a great deal more time and would be uninteresting. Suffice it to say carbon dioxide and certain of the marsh gas series were detected as gases. Ammonia gas was detected, at the very earliest, about the tenth day of decomposition, and it seemed that in the majority of cases it did not appear until the twelfth or fifteenth day, while in the marsh gas compounds some members appeared very early in the process and continued almost entirely from the beginning to the end of decomposition. The lower molecular forms of this series of compounds, in other words, the simple molecules of marsh gas, are almost invariably in a gaseous state and the thicker and more waxy the gas becomes the more complexed are these hydrocarbon compounds, and they sometimes, as you know, appear almost as a paraffin.

I might state here in passing that it is to this substance that we have to look to more closely for the discoloration of teeth in putrescent canals. There were about six of the members of this group that we came in contact with that we have not yet made a complete analysis of their combination with other substances in the process of decomposition. We could dwell at considerable length upon these compounds in putrescent pulps, but that is not the function of this paper.

In the study of this question of tissue decomposition by bacterial action we have hydrolysis and oxidation to deal with. We have already stated that hydrolysis is the breaking up of the compounds and liberating the water, or adding to that compound, while oxidation is the introduction of oxygen into the molecule of proteid-like substance forming different compounds. In the majority of cases the hydrolytic process is more common. The agents that influence both of these processes are in the main quite similar. As we have already stated, some bacteria hydrolyze an albuminous body while others oxidize it. In the process of decomposition of such substances as tissue rich in proteids, we may have many formations of a gaseous, liquid or solid substance that are purely the result of decomposition.

One interesting fact is that in the putrefaction of tissue by bacteria that are purely the saprophytic species, we may have oxidation

and hydrolysis going on the same time. The hydrolytic cleavage of substances in the decomposition by bacteria must in the majority of instances take place in the absence of the free oxygen of the air. This brings up the question again of the vital phenomena of bacteria and the results of environment of these organisms. The decomposition of the compound that is to be hydrolyzed by the decomposition processes by bacteria reverts itself back to the anaerobic bacteria. In the first instances of putrefactive changes we are confronted with the possibilities of the first action being due to the anaerobic, and the second action may further be carried on by the aerobic forms of bacteria. In the decomposition processes of nitrogenous compounds by anaerobic processes, we may have poisonous compounds formed. They are sometimes reckoned as proteid poisons. They may be further broken by aerobic bacteria, or, in other words, they may be oxidized in harmless bodies. If our theories and practical demonstrations are of any value we are forced to one conclusion, that is, the anaerobic bacteria are the result of adaptation. This can be said to be almost universally true in the case of a putrescent pulp. The bacillus proteus that is found in the decomposition of the pulp is beyond any question an anaerobic bacteria until it finds its habitat to be in the pulp of a tooth, and this pulp is excluded from the free oxygen of the air. Then the obduration of the organism begins, and the incubating period from the time of the exclusion of the bacilli from the free oxygen of the air may vary anywhere from twenty-four hours to five years.

A large number of factors must be brought into play regarding this peculiar phenomena of the decomposition of the pulp tissue. In artificial decomposition we found that certain gaseous substances were formed very early in the processes. These gases are the result of very early changes taking place in the tissue structure. In the case of decomposition of the pulp excluded from the free oxygen of the air, the process as a rule is one of hydrolytic cleavage, and the oxidation process is comparatively slight, if at all present. The spirillum rubrum is one of the best examples of what will take place in the absence of the free oxygen of the air. Here we have a pigmentation when grown anaerobically, but when grown aerobically the pigment is absent. These, with many other facts, are some of the fundamental principles underlying the process of putrefaction.

(To be continued.)

Our Foreign Department

THOMAS L. LARSENEUR, D. D. S., Foreign Department Editor

ELECTRICAL SLUMBER.

(Journal Odontologique de France, Paris, August, 1908.)

The discovery of Dr. Leduc is practical; sleep is obtained unquestionably and without danger; surgical narcosis of the future.

The researches of Dr. Stephane Leduc, of Nantes, concerning artificial life have been violently opposed; we have consequently somewhat forgotten that the same clever man had realized other discoveries (which were, if not more important, of a more practical reach). We will talk today of the electrical narcosis.

Although this process has been highly contested and declared applicable to animals only, it begins to spread, notably in England.

Contrary to what has long been admitted, the brain is very susceptible to electrical currents. In order to produce sleep, the electrical current should travel in the antero-posterior way, *i. e.*, from the occiput to the frontal, the two halves of the brain will be equally electrified. If the current is given in an oblique direction across the head, vertigo and even syncope will take place.

The current used should:

Always travel in the same way.

It should be intermittent, open and closed one hundred times in one-hundredth part of a second.

Its intensity should not be increased abruptly, but gradually.

Let us apply such a current to the head of a dog. The hair at the parts where the electrodes are to be applied should be thoroughly shaved. The negative pole is placed on the head and positive electrode on the posterior part of the back.

The animal gradually falls asleep without any resistance whatsoever. He is in a state of muscular-relaxation and in a state of anesthesia which may be compared to that obtained with chloroform; all sorts of operations may be performed on him.

Let us shut off the current. Contrary to ordinary anesthetics, the awakening is instantaneous. The animal at once takes the normal condition which he had before the experiment. "He jumps around joyfully and eats with appetite the food which is given him."

The necessary current to obtain electrical narcosis with a dog measures from eight to ten volts and from two to four milliamperes. If we continue to increase the voltage of the current, we will have inhibition. Should this state be prolonged beyond a minute, death will take place.

This manner of electrocution produces the easiest and the most unconscious death. Dr. Leduc also advises it to the Americans, who use very high voltages and inflict severe sufferings to those condemned to death, and which does not always kill them outright.

If, on the contrary the current is maintained in the given doses, the sleep may be prolonged for quite a length of time without any inconveniences.

Dr. Leduc has also put a rabbit to sleep for four hours without any inconvenience whatsoever taking place at the awakening.

This clever man has also experienced the electrical sleep on himself. He used a current of thirty-five volts and four milliamperes; here are given below his impressions under the electrical sleep:

"The sensation produced by the excitement to the superficial nerves, although disagreeable, is easily endured; this excitement shortly disappears after having attained its maximum, it is diminished in spite of the increase of the electro-motor power. The face is flushed, also the neck and the forearm; then a prickling is felt in the extremities of the fingers and in the hands. The inhibition first reaches the speech centers, then the motor centers are completely inhibited; it is impossible for the patient to react to excitements even the most painful, it is also impossible for him to communicate with the experimenters.

"Although the limbs are not in a complete state of muscular relaxation, they do not offer any rigidity.

"Groans may take place, but they are not caused by any suffering from the muscles of the larynx. During our experiments the pulse remained normal, although respiration seemed somewhat embarrassed.

"When the current had reached its maximum, I could still hear, as if I were dreaming, what was said around me. I was conscious of

my incapacity to move and to communicate with my colleagues. I felt them touching me, pinching me, the pricklings of the forearm, but these sensations were those of a profound numbed limb. The most unpleasant impression is to follow the dissociation symptoms and the successive loss of mental faculties; that impression is similar to that of a night-mare in which facing an imminent danger, I felt the incapacity of letting out a sound or making a move. Although I was always conscious enough to realize that my colleagues did not carry the current further in order to achieve the inhibition."

The time is not far away where surgeons will replace anesthetics by electrical narcosis, as it contains all advantages:

No excitement period.

No danger of asphyxia.

The sleep may be prolonged without any inconvenience.

The awakening is simple, easy and immediate.

No disagreeable symptoms after the narcosis.

Furthermore, the electrical sleep gives a marked sensation of welfare; there is more freeness of the head, the return of the mental faculties is more rapid, to such a degree, that Dr. Leduc has used it with great advantage in therapeutics for cases of neurasthenia and depression of the nervous system.

Finally, local anesthesia may be obtained with the same current if it is applied on the course of a nerve, provided that the latter is not covered up by thick muscles.

DR. E. BLANC,
L'Avenir Medical et Therapeutique.

DEATHS FROM COCAINE IN AUSTRALIA.

Recently in the South Australian House of Assembly the attorney general, in reply to a question, said that he had been informed of two cases of death during the past few days consequent on the administration of cocaine during dental operations. The medical certificate in one case was "heart failure"; in the other, "diabetes, poisoning from cocaine or eucaine, coma." The same dentist operated in both cases, and he was a registered practitioner, but had passed no examination in dentistry or anesthetic administration in that state. The attorney general expressed surprise that the city coroner had considered no inquest necessary, and he asked his reasons for this opinion. If necessary further action was to be taken.

SCLEROTIC TEETH.

BY DR. FELIX FISCHLER.

(*Archiv für Zahneilkunde*, Charlottenburg, May, 1908.)

The author speaks of a class of teeth which in their treatment offer unusual difficulties. In preparation of the cavity, they even resist the sharpest burs, in extracting they very frequently break in spite of most careful luxation; finally, they are a puzzle to the dental practitioner.

In their outward appearance these teeth show an almost uniformly yellowish color, with few shades at the cutting edges, and the cusps are inclined to be of a pale blue, and a pronounced nacreous luster. They generally stand very closely together, and in consequence of their almost cylindrical shape, examination of their approximal surfaces is almost impossible without previous separation. On their visible surfaces, they are very little subject to caries. There is always a more or less distinct abrasion of the masticating and biting surfaces. Sclerotic teeth do not occur in patients below the age of twenty nor in slenderly built persons, but are mainly found in male patients of the working class, soldiers, policemen, and in all strongly developed persons with robust skeletons and good nutrition. In elderly persons their occurrence is sometimes associated with alveolar atrophy.

Physically, sclerotic teeth possess extraordinary hardness and a glass-like brittleness; the interior of their break is not splintery, as in other teeth, but is smooth and shell-like. Hypersensitivity of the dentin is never present; the pulp-cavity is small and lies very deep, the root-canals are peculiarly narrow.

Chemically, sclerotic teeth contain a much higher percentage of calcium phosphate than normal teeth, which doubtless accounts for all their abnormalities. This surplus of calcium also accounts for the rare occurrence of caries in these teeth. The hard enamel and the tissues which are poor in organic substance offer a great resistance to acids and bacteria. If any caries are present, they are almost always found close to the cervix of the teeth, where the enamel is thinnest, at the approximal surfaces of the bicuspids and molars. Owing to the insensitivity of the dentin, pains are only felt if the pulp is exposed and inflamed, and only if hot and cold fluids reach the carious cavity, which is well protected by the approximal wall of the adjoining

ing tooth. The characteristics of pulp pain are especially typical in sclerotic teeth: an intermittent, long, lancinating pain, which is difficult to locate. The patients often complain of severe neuralgia or attribute the pain to a perfectly intact tooth. Only a very careful examination of the approximal surfaces will reveal the hidden cavity.

Even in the absence of caries, these teeth are often the seat of violent neuralgic pain. All pathological conditions called forth by a surplus of calcium deposits can be observed in sclerotic teeth; calcification of the pulp, denticles, deposits of calcium salts at the walls of the root-canal and cementum. The author hesitates to associate the origin of sclerotic teeth with general arterial sclerosis. In almost every case, however, he has observed a pronounced sclerosis of the pulp-vessels. The whole pulp is rigid to the touch, grates between the fingers, and is always of a whitish chalk color.

In fully 150,000 polyclinic patients, Dr. Fischler has never observed sclerotic teeth at a youthful age, which leads to the conclusion that under the influence of strongly calciferous food, especially of the popular German brown bread, they develop simultaneously with a robust skeleton.

The rigidity and inelasticity of the alveoli and maxillary bones, together with the brittleness of the dental tissues, heighten the danger of fracture during extraction. Only deep insertion of the beaks of the forceps into the alveoli and short and frequent luxating motions continued for a minute or so will enable the operator to remove a sclerotic tooth whole. Fortunately the intensity of the pain stands in inverse proportion to the difficulty and the slowness of the extraction.

PROPHYLAXIS OF SYPHILIS.

(British Journal of Dental Science, London, May 15, 1908.)

The tendency of medicine is toward the discovery of antitoxic vaccines for the prevention and cure of many diseases which were formerly, and are still, empirically treated with drugs in a haphazard manner. But drugs have still their uses, and as an anti-syphilitic vaccine has yet to be discovered, we must be grateful to Professors Metchnikoff and Roux of the Pasteur Institute for the experiments which would seem to have proved the success of calomel, applied locally, in preventing the onset of a disease which has done more harm to the human race than probably any other in modern times.

The successes of the experiments rested on the fact that the anthropoid apes were susceptible to inoculation with the disease. The discovery of the specific microbe the *Spirocheta pallida*, or as it was subsequently named, the *Tripomema pallidum* was also a discovery of the utmost importance, and it is not too much to hope that a vaccine may be prepared before long which may be as beneficent as the several other vaccines in daily use for the treatment of other diseases.

The history of the experiments is given in an interesting little work by Dr. Paul Maisonneuve translated by Dr. de Verteuil ("Experimental Prophylaxis of Syphilis": John Wright & Co., Bristol), and we propose to give our readers a brief resume of the work.

The experiments on apes proved that the lesions of primary, secondary and tertiary syphilis contain an infectious virus; gummatæ are rarely, if ever, the starting-point of an infection. Mucous patches—such as those occurring in the mouth—are one of the most common causes of infection. It is considered impossible to contract syphilis through the intact skin or mucous membrane, though a slight scratch or excoriation imperceptible to the naked eye is sufficient to cause inoculation. The specific microbe is found in all lesions in all stages and in hereditary as well as in acquired syphilis. The inoculation is at first a purely local infection on the surface and easily affected by a local therapeutic agent, but in a very short time, after the virus has got into the blood, it becomes a generalized disorder and can no longer be affected by a local treatment. It is therefore most important to act promptly on any suspicion of contagion.

Mercury has been used as a remedy in syphilis for hundreds of years, and it was only natural it should be tried in these experiments. Various preparations were used with varying success, until it was found that liquids and solutions containing mercury were inefficacious, but that an ointment composed of calomel 10 grs. and lanolin 30 grs., well rubbed into the lesions within a short time after the inoculation, prevents the onset of syphilis.

Although all the experiments were made on apes, one highly successful one was made on a human being in the person of a young French doctor, M. Maisonneuve, who, of course, quite understood what he was about to undergo, and who deserves great praise for his courage. At the same time four monkeys were inoculated with the same virus. Two of them were untreated and showed the usual signs

of syphilis, subsequently. Another was rubbed with calomel ointment twenty hours after inoculation, and it also developed syphilis. The four monkeys and M. Maisonneuve were both rubbed with calomel ointment on the affected part for five minutes, one hour after inoculation, and neither of them presented any subsequent symptoms of the disease.

The practical application of these experiments to us as dental surgeons is given in the author's words as follows:

"Dentists are liable to contract the disease in the exercise of their profession. It is indeed known that mercurial stomatitis appears oftener and with greater intensity among individuals who take little care of their mouth; as a rule these people are recommended, before commencing a course of mercurial treatment, to have their teeth attended to, to have any carious teeth extracted or filled, to have any tartar scaled away, and, in a word, to have all causes of secondary infection removed. In carrying out any of the above operations, a dental surgeon may easily sustain a slight wound or abrasion through a broken tooth, through which the virus can penetrate into the organism. Henceforth, whenever the examination of a syphilitic patient necessitates direct contact from which a wound results, nothing will be easier than to rub in calomel ointment at the spot where the virus may have entered."

A CASE OF ACUTE PULPITIS CLOSE TO THE APEX.

BY DR. W. B. PIETKIEWICZ.

(*L'Art Dentaire*, Paris, June, 1908.)

We are familiar with cases of acute apical pulpitis, although this disease is far from being common. We must acknowledge that in most cases it is caused by traumatic injury determining the necrosis of the pulp and subsequent infection rather than an infection carried from the gum line, following the root to the apex and infecting the pulp at that point.

It is one of these cases that I have followed from the beginning which will be written here below.

I was treating at intervals, unfortunately far apart, Dr. D., who was kept very busy with his practice outside of the city. The left

upper third molar having not received early attention was affected with an acute pericementitis and was removed without difficulty and without causing injury to the neighboring tooth, February 1, 1907.

In October, nine months later, Dr. D. called on me, telling me that heat and cold especially annoyed him very much on the left side of the mouth. After a very close examination I could not locate any caries.

I simply advised the use of an alkaline tooth powder. On November 12 my patient returned, telling me that cold was giving him very intense pains, which were increasing more and more every day.

I made a test with the syringe, using cold water, and I noticed that the second left upper molar was the tooth giving the annoyance.

It was perfectly sound and offered no traces of caries even at the gingival border. The gums were slightly loosened at the distal portion of the tooth. First I thought that this phenomenon might have been caused by the receding of the gums following the extraction of the third molar nine months previous. But the doctor remembered he had injured himself while eating, with a fish bone, some time in September. A drop of pus leaked from the the gums under pressure. I used the cautery and dismissed the patient.

On November 17 Dr. D. called again, telling me that he could no longer stand the pain which ensued every time he attempted to drink. Under examination of the mouth I found all the symptoms of a pericementitis on the second upper left molar.

A distal incision was made between the bucco-distal and lingual roots of the tooth. A sinus was found at the medium line of the palate opposite the extracted third molar.

All fluids, antiseptics, etc., which were injected in the gingival opening would run out through the palatal opening. The drainage brought about some relief to the pericementitis, and subsequent healing to a portion of the sinus. The gingival incision did not seem to heal and always gave passage to a certain quantity of pus in spite of cauterants which were applied.

On December 25 Dr. D. called on me, telling me that during the night sharp pains had suddenly appeared and that he was suffering with neuralgia on the left side of his face. The tooth was extremely sensitive to touch. What puzzled me on the diagnosis was that although the tooth was very susceptible to thermal changes, both

heat and cold, it remained very transparent to the light rays which were applied to the lingual surface.

This led me to believe that there was an abscess formed between the roots. A large incision was made between the buccal roots. But the following day I had to extract the tooth as the pain was increasing more and more.

At first sight the tooth appeared to be seemingly sound; purulent fungus could be seen between the roots, giving a very putrescent odor.

At the center of the apex of the disto-buccal root a dark point could be seen instead of the pink normal tint. I then noticed that the whole root had the same appearance and that the pulp was mortified in it, although the pulp was normal in the pulp chamber and in the other roots.

ON THE TREATMENT OF NEURALGIA WITH HOT AIR.

BY DR. HENRI DAUSSET.

(*La Bulletin du Syndicat des Chirurgiens Dentistes de France,*
Paris, August, 1908.)

This is a treatment which is yet unknown and will be found very interesting to dentists who will read this new method of applying hot air in the treatment of neuralgia.

Hot air has not been recently introduced in therapeutics, but for the past few years systematic studies on its action have been made, and we are just about to know its effects and its technique.

Now it is considered as a physical agent occupying the first rank, especially in the treatment of neuralgia. It has been used with noted success by Taylor in England, Bier in Germany, Frey of Baden-Baden and several others who have followed them. I read a paper relating to this subject, containing the technique and effects of this treatment, at the last meeting of *Physiotherapia*.

I will give you in a few words the principal points of this paper: The question is to make use of the principal quality of the heat which acts as an analgesic. For that purpose high thermalities are used which may sometimes reach 300° c.

Physical properties of air, which is a poor conductor of heat, allow the skin to stand high temperatures without burning it. It is

impossible to obtain with any other agent such an intense revulsion. The technique of the treatment is somewhat delicate and requires a great deal of experience with hot air, which differs according to the case and to the skin to which it is to be applied.

Dentists have been familiar with hot air for a number of years, and they know that in some cases of hypersensitive dentine it was easily sustained and sometimes at a very high temperature. This may be applied also to the skin. I will not enumerate to you the number and different kinds of neuralgias which have been cured by physicians with hot air, but I wish to call your attention particularly on the treatment of facial and sub-orbital neuralgias, those having a superficial origin and which may be rapidly cured. It is also the case with a large percentage of these rebel cases of neuralgia which often compels the patient to submit himself to serious surgical operations.

Schlutz, a physician of Bonn, mentions a series of twenty of these so-called hopeless cases; after all known treatments had been given, they had been sent to surgeons for operation. Twelve of them were rapidly relieved and cured with the hot air treatment. This I believe is quite a noticeable percentage. Slight neuralgias of dental origin are also readily relieved by the use of the hot air treatment provided the cause may be removed, *i. e.*, by treating or extracting the tooth.

In cases of inflammation caused by the teeth its application may be found very valuable, especially if it is used in the early stage before the period of suppuration, although I do not possess records of these cases.

I particularly call the attention of dentists to the cauterizing action of hot air, as in many cases it might replace the cautery with much less pain to the patient.

Notwithstanding the fact that cauterizing with hot air is not painless, it may be accomplished with much less pain as there is no sensation of contact. Furthermore, the heat may be regulated as desired and may be applied between 200 c. and 600 c., thereby limiting the depth of the eschar.

The active hyperemia which is obtained may be of any intensity desired without altering the epidermis, thus enabling us to apply several treatments daily and which may be continued for weeks should the case require it.



ORIGINAL CONTRIBUTIONS

TOOTHSOME TOPICS.

Yaller Dog.

BY A. QUEERQUILL.

Bow-wow-wow!

Hello, mister!

You don't know me, I guess; but I know you.

Your name is Kickam, and you live at 1149 Crosstown boulevard.

Your cat knows me. We've met in the alley more than once; and, say, I want to tell you she can climb a fence quicker'n any cat in the ward.

We have lots of fun together, though I can't say she's in love with me exactly. Guess I have the biggest share of fun; but even a yaller dog has to have *some* recreation—his day.

You ought to remember me; I'm the dog you kicked at one sloppy day not long ago when you didn't feel real good. You'd been out the night before. I saw you when you got home. You were a little wee-wauwy and tried to open your door with your office key. Took your shoes off outside. But a woman in white appeared at the window and told you you'd better go and sleep with that dog—me. I couldn't stand for that and I ducked.

But about that kick: I enjoyed it, I guess, more than you did. I am used to being kicked at, but I seldom get kicked. I've got the art of getting out of the way right down fine.

You didn't have any good reason to kick at me, only that I'm yaller, and you felt measley and had to kick at something. It must be race hatred. Still, if I had been a big bull terrier, you might have restrained yourself.

Well, I'm unfortunate in some ways and have to make the best of it. I can't brag of my ancestry—don't know much about it, and it don't worry me much either. I manage to have a pretty good time

in my way, *some* of the time; and I don't have to get a hump on me at any one's call or whistle either—not me.

But that kick: I'm really sorry that you got hurt and mussed up; but I didn't laugh at you when your feet went out from under you and you went down in the mud and slush. I didn't even grin. But some boys did. Yes, they whooped. *Some* boys are awfully ill mannered; and some men use language that a yaller dog would not be guilty of.

But I suppose that is man's (and boy's) right and privilege. Seems to be. But if anything under the sun has a right to use emphatic language—at times—it is a yaller dog. But, sir, I never do. No one ever heard me say a mean thing.

Most of the boys around here are my friends (not all) because I chase ball for 'em and help 'em tease cats. Cats and yaller dogs and boys don't always agree. 'Tain't in the nature of things I suppose.

But those boys ought not to have laughed at you; and, if you remember, I set them a good example by not laughing; and I picked up your hat for you. I'm a good deal of a dog if I am yaller—same as you are a gentleman—maybe—among your kind. And I appreciate a gentleman, the real thing; but say, I hate a dude; and of all things I hate a dude dog.

Say, talk about your clothes getting wet and muddy that day; you ought to have seen that pup they call Duke (next door to you) one day when I had a meet up with him when out for a promenade—with his mistress. I have no ill feeling towards the young lady, and I can stand a reasonable amount of familiarity from other dogs generally, but when that dude pup, dressed in a glad rags red over-coat with gold trimmin's and a ribbon in bow-knot on his neck, came poking his nose around me and trying to be funny, asking if I had used Pear's soap this morning, it was too much for me, you bet! and down went Duke, glad rags and all, into the mud and slush worse than you did.

Say, I had a yaller dog picnic that day, sure! Miss Flossie McGoose, who adopted that pampered pup (at an outlay of \$50), when she saw me rolling him around in the mud, came at me with a \$15 parasol, busted it and got it all mud—and never touched me. Girls can't hit straight, but I wasn't there to be hit; but Dukey was.

Wow, wow, wow, but I enjoyed myself. Dukey was howling and Miss McGoose gathered him in her arms and called him her "baby" and then wow! you ought to have seen that nice white waist of hers. Their promenade was short. I was sorry for her, but a yaller dog has to sustain his yaller dignity, you bet.

Say, the dog catchers are going to get him some day, because Miss McGoose has got the "dough" and that is what dog catchers want. They don't want the dog; but he might get lost, and so they take 'em—good ones—to save 'em for their owners—or some one else who will pay the fine, costs, etc.

That's one thing *I* don't have to worry about. They won't take me. I'm immune. When they see me they don't see me, see? They are yaller color blind. Huh?

But I'd like to see 'em arrest me. I've got a pull with the police, and especially Officer Doolan on my beat. He remembers the night "Bat" Bourke was trying to get away from him, when he caught him red handed with the goods coming out of a house, and I got in "Bat's" way and tripped him, and Doolan made good.

When "Bat" gets out, I guess I'd better find another quarter to live in for a while, or go over to the dye house for a couple of days. It don't take me long to change boarding places, however.

Me and Doolan are good friends. I never squeal on him or make a bow-wow when he goes in at the side entrance. He knows that, and often brings me out a nice "red-hot" and says, jocularly, as he tosses it to me, "Eat that, you little yaller cannibal." ..

Once he says to me, "Here, yaller, dog eat dog. G'wan, now, an' ate yer mother-in-law. I wish to hiven you could ate mine."

I suppose that's some joke, but if mothers-in-law are as good as that, me for some every day—if I can get 'em. But to tell the truth I'm still a bachelor—haven't just found my affinity—but I've been thinking about getting married. At least I have an unappeased hankering after mother-in-law—if Doolan wasn't joshing me.

Well, so long, Mr. Kickam. I've got an appointment up this alley. See you again!

Ta-wow!

THOU SHALT NOT KILL.

The following is my theory and practice:

He who does not understand the philosophy of degeneration can not diagnose disease in the acute stages, hence the application of so-called counter irritants misapplied lead to chronic conditions. This applies to both dentist and physician. The man who does not understand a natural *law* as it applies to minor surgery—the treatment of teeth—is a failure; the so-called protected dentist, when if he is willing to stake his all on his diagnosis and results needs no protection. It is only the incompetent man in any line of business that seeks protection and that at the expense of the public's ignorance. The ignorance of the public is the salvation of an incompetent man in any line of business and especially the professions. There is no part of a man that a surgeon kills before he operates. No dentist should kill the nerve! Take it out alive under an anesthetic (local or general). When you kill you infect and the future of the tooth depends on the absorption and elimination. There will always be healing by first intention if the above rule is followed; that is, aseptic surgery, under an anesthetic either local or general, immediate removal of the live tissue and filling the root canals, filling the tooth and finishing the operation if necessary. By the use of peritundo you can open into a pulp chamber without pain, remove the nerve by pressure anesthesia, thoroughly fill canals and healing will follow by first intention. Or to those whose knowledge of surgery is limited and you want to remove the nerve from a tooth where the pulp is not exposed, say a tooth you want to use for an inlay bridge attachment, drill a hole to a bearable pain, place in there a bit of arsenic the size of the point of a pin, seal with cement and have it understood the patient *must* return the following day; otherwise the absorption of arsenic by the tooth destroys the circulation and you cannot use pressure anesthesia. Neither will you have a hemorrhage—hence you have infection because you have killed. Arsenic should not be put on live tissue, only on the dentine as described above which relieves the pain and you can drill to an exposure without pain, then apply your pressure anesthesia, allow for the hemorrhage, remove the contents, clean canal and fill with anything you like if you will use a little skill and *don't* puncture or penetrate the

apex and set up mechanical irritation. You will have no trouble and one or two treatments will be sufficient. Exceptional cases only when I treat a tooth more than once.

When you kill you *infect*. Of course the mechanic doesn't believe that. The following I demonstrate every day: People who come here who have had teeth treated twenty years ago and that have never caused them the least trouble, just as soon as they take the baths that tooth aches, face swells, then suppuration. Now there is no exception to this rule. The average dentist asks a few questions and *daubs* the gums with iodine. If the tooth is the cause of the trouble, iodine is of no service; if not, you don't need the iodine. What does that indicate? That the nerve was killed by arsenic or died; the tissues absorbed the infection caused by the dead nerve and when the elimination and absorption is not increased by baths the tooth will serve without causing trouble—sometimes—but just the minute a patient as described above is subjected to a course of baths or a course of treatment or the vitality of the patient is lowered through sickness or, as the protected dentist says, "You have taken cold" (which you don't do), then trouble. The following is my proof: I have patients like the above every day taking baths and rubbing mercury and taking potash (and, by the way, potash is a nerve tissue destroyer and especially in the hands of unscrupulous and incompetent men), and many cases I have with an exposed nerve and the patient to the point of salivation and then full of potash. I remove the nerve by pressure anesthesia and complete the operation which does not even cause it to get sore and heals by first intention, and I make this positive statement: That tooth will never give the patient any trouble because I did not kill and cause infection, but on the opposite side of the mouth in the same patient a tooth had the nerve killed in years past and no trouble until the patient took treatment, which proves beyond a doubt that disease and degeneracy go hand in hand, and a tooth once infected never gets well, while an aseptic operation under pressure anesthesia will never give trouble. There is nothing wrong about taking the appendix out of a person if it is taken out right, neither is there anything wrong about taking the nerve out of a tooth if taken out right, and I want to go on record first, last and always that it is wrong to kill nerves. There is

enough that way before they call on a dentist. (When you kill you infect.) You can not limit the action of arsenic.

I stand ready to prove the above principle both as to treatment and results. Correct diagnosis is based on the philosophy of degeneration according to a natural law.

What about a bloodless operation in surgery? What becomes of the blood in the tooth when you kill the nerve? Two principles in medicine they depend upon for a cure—absorption and elimination. If nature absorbs the blood in addition to what the tooth absorbs which colors the tooth, then nature eliminates its share. In after years when the patient becomes debilitated or from exposure that tooth will be the seat of trouble. If an upper first or second molar, the region of the nasal plexus and antrum will be involved. How do I know? From the cases I have here from all over this country.

Now if you cut a tree the sap runs, and the natural law says if you cut a soft tissue it is natural for it to bleed; hence if you kill you have no hemorrhage. I say you *must* have in all surgical operations if you expect healing by first intention, a hemorrhage; and you must not use carbolic acid at that time nor anything that will stop the flow of blood. Warm water assists nature to relieve itself of the condition that was the cause of the trouble. In surgery when you have no blood you have a dead tissue and necrosed bone, and you also have no healing until the circulation is again established. Why will a dentist create a dead condition by killing the nerve?

My experience prompts me to write the above, then I certainly do feel sorry for the public and the many people who come here with their mouths and teeth ruined from abscessed conditions. I wonder why they don't teach a common sense method of treating teeth. Why don't they *teach* a patient to keep what he has rather than give him something to carry in his pocket and that will be a source of irritation as long as he has the work in his mouth? Just yesterday a recent graduate called on me and I certainly was surprised to see what beautiful porcelain and inlay work he did—a mechanical artist! But what a pity to turn loose on the public such a man, whose business it is to relieve pain and can only do it by extracting the tooth or killing the nerve, and it is a chance if he saves the tooth. Then what protection has the patient if he loses the tooth? There is no recourse by law, for he is a *protected* dentist.

How would the professors that turned him loose on the public like to take a chance with a professional man like that in their mouth?

Don't you think this is a serious question, these protected dentists?

O. W. HUFF,
Hot Springs, Ark.

REVIEW OF GRAY'S ANATOMY.

Thoroughly Revised and Re-Edited With Addition.

BY JOHN CHALMERS DACOSTA, M. D., AND ANTHONY SPITZKA, M. D.

Published by Lea & Febiger.

With the seventeenth edition of Gray Anatomy just issued the publishers have only corroborated the fact that it is the standard of anatomical text books, as it was heretofore for the last half century. To be sure, no one anatomical text book today, no matter how modern it may be, is perfect, hence here, as in other books, one can only offer suggestions for the improvement of the same. The text, the various additions, plates, drawings and diagrams, are executed to perfection and certainly offer great aid to the student, particularly the beginner. However, one can offer the following suggestions: In the department of osteology it should be shown and explained to the student the identification of the various bones; that is, whether they belong to the right or to the left side of the body. Again, the book being quite voluminous, it becomes therefore somewhat of a burden for the student to carry to the dissecting room, but it may be reduced in volume by reducing some of the practical and surgical points, remembering that it is a text book of anatomy pure and simple. In myology all muscles are masterly described and illustrated, yet the blood supply of these muscles is left out and the student is compelled to hunt among the arteries in order to find the proper blood supply of each muscle. The introduction of the new anatomical nomenclature is certainly a great step toward the adoption of the new names. However, in my estimation, the new name should be given in heavy type and the old name in parenthesis.—EDITOR.



ABSTRACTS AND SELECTIONS.

CAUSES OF FAILURE IN THE USE AND APPLICATION OF PORCELAIN.

BY CHALMERS J. LYONS, D. D. S., JACKSON, MICH.

Since the advent of the present century the dental journals have been teeming with their articles on porcelain, until today it indeed seems that there is nothing to be said. Considerable time has been spent in the discussion of the merits of the high and low fusing porcelain bodies. A great deal of time has also been taken up in discussing the color problems of porcelain, and much time and space has been given to cavity preparation.

Many men have become so enthused over the possibilities of restoring lost natural tooth structure with a material resembling in appearance the tooth structure itself, that they could write or think of nothing but porcelain.

To these over-enthusiastic men we undoubtedly owe much, for their enthusiasm has stimulated the more conservative men to greater activity.

Others, the over-conservative, have condemned the use of porcelain without even investigating it.

To the man between these extremes we owe a debt a gratitudo for placing porcelain on the basis on which it now stands, viz.: that of one of the many useful materials we have today for the purpose of restoring natural tooth structure lost through the ravages of decay. So that at this time we can say that gold, the plastics and porcelain all occupy their places in the realm of dentistry, and each, when judicially and conservatively used, has a field which none of the others can fill.

Many good men took up the problem of porcelain a few short years ago, who were careful, painstaking operators, but after a few failures condemned it without trying to ascertain the causes of failure, and today their gasoline and electric furnaces are sweetly reposing in some dusty corner of their laboratories.

So, tonight I want to say something on the "Causes of Failure in the use and application of Porecelain."

I wish to classify the failures under four heads—a failure in any one of them foretelling a complete failure of the whole.

I. Failure in understanding the composition and characteristics of the porcelain body.

II. Failure in cavity preparation.

III. Failure in color combining.

IV. Failure in judgment in deciding where porcelain is indicated and contraindicated.

Under the first head of failure is understanding its composition and characteristics, I want to give you the definition of dental porcelain.

It is defined as a material composed of silicon oxide, the silicates of aluminum, potassium and sodium, which becomes a hard and dense mass by the process of fusion. Now, what do we understand by the term "fusion"? Fusion is a chemico-physical change produced by subjecting porcelain to enough heat units for a given time to cause re-arrangement of the molecules with partial vitrification and a glaze of the surface of the mass. This hard, dense mass which is essential in the application of dental porcelain is not procured unless the performance of the operation of fusing is successful.

Dr. John Q. Byram in the *Items of Interest* says: "The baking or fusing of the porcelain body is one of the most important factors in porcelain work, as the results as a whole depend upon its successful performance.

"Density, strength, shade and surface gloss are effected by and dependent on the proper conduct of fusing.

"Too rapid heating or over-fusing will affect the density and strength by causing porosity and brittleness, and insufficient fusing will impair its crushing strength and gloss.

"The given shade of any porcelain depends on its fusing at exactly the heat intended for that special preparation.

"The glaze is defective if insufficient heat has been applied, and a glass-like appearance is imparted to the surface by over-fusing."

When the number of degrees of heat required to fuse the different porcelain bodies was published and adopted by the profession only the half had been told. The time that a porcelain body is sub-

jected to a given degree of heat or a given number of heat units is the important factor in the process of fusion.

It has been clearly demonstrated that porcelain has no definite fusing point; that we can fuse even the consolidated body which is estimated to have a fusing point of 2,600 to 2,700 degrees heat, on pure gold whose fusing point is 2,016 degrees, by subjecting it to a low temperature for a long time.

The lower the temperature and the longer the time given in the process of fusing, the more homogenous will be the mass, and the characteristic color will be retained.

In not understanding the characteristics of porcelain, shrinkage and the essential requirement of cleanliness have not been given the attention and thought that this work demands. While shrinkage cannot be overcome on account of the composition of the material, it can be controlled so that the operator may definitely know how much shrinkage to prepare for. This can be accomplished by having each mixture of a uniform consistency, mixing it just as thick and dry as it is possible to manipulate it, and by a very thorough condensation drive to the surface and absorb surplus water until the piece is hard and firm. By so doing the crown or inlay will take on the minimum amount of shrinkage in fusing, and it will be more homogeneous in texture.

Absolute cleanliness is another important point in avoiding failures in porcelain work. I have yet to find a place in dentistry where uncleanliness can be tolerated. Porcelain work is no exception, and perhaps it can be less tolerated in this work than in any other.

The porcelain work should be done on a bench or cabinet, entirely separated from the other work of the office, that it may be scrupulously clean at all times. To be successful, no dirt or oil of any kind or amount should come in contact with the porcelain body of the platinum upon which the porcelain body is to be placed for fusing.

After grinding a crown or inlay and before adding more porcelain body, it should be thoroughly scrubbed with soap and water to remove any foreign matter that may have accumulated from the engine stones. Uncleanliness is usually responsible for failure in procuring dentistry, as any foreign matter in the porcelain body or on the platinum will be turned into gases and these gases in trying to escape will cause porosity in the crown or inlay.

In summing up the first cause of failure: If the cavity preparation has been all right, and the color of the crown or inlay is good, but the piece is lacking in density and strength, then the crown or inlay has been a failure.

Second cause of failure: That of faulty cavity preparation.

No doubt but what this has been the cause of more failures than any of the other causes I have mentioned. Disregarding the foundation work or principles of cavity preparation for inlays, many dentists have become discouraged because they began to construct inlays before they had studied these principles.

The principles of retention of the different fillings, gold, porcelain, etc., must be understood, for cavity preparation for inlays is as distinct as that for gold fillings, and the one must not be confused with the other.

The preparation of many cavities for inlays requires the sacrifice of sound tooth structure in order to secure the retentive resistance that is essential, and to obtain proper color effect. The theory that close adaptation and cement will retain an inlay is a beautiful theory, but the successful dentist cannot built his practice on theory. This theory is adverse to all known laws of mechanics, and will not work out practically in porcelain inlay work. In other words, saucer-shaped cavities without any retention other than the film of cement used in setting the inlay are responsible in the large majority of cases for the failure and subsequent condemnation of this material and process. The subject of cavity preparation for inlays is too broad for the time allotted to me tonight to take it up in all of its details, so I will only take the time to mention a few of the essential requirements.

1st. The force and direction of occlusion must be taken into consideration before beginning the preparation of the cavity, then by grooves and angles, secure all the mechanical retention that is possible without forming undercuts.

2d. The walls of the cavity should slightly diverge towards the margins.

3d. The cavity should be as deep as conditions will permit with the pulpal wall parallel to the plane of the surface on which the cavity is located.

4th. All undercuts must be obliterated so as to be able to withdraw the matrix without distorting it.

5th. Frictional retention must be secured by having the pulpal wall as extensive as possible without forming undercuts.

6th. Sufficient working space must be secured before beginning the operation.

If these essential laws are not carried out nothing can be expected except failure. We cannot slight or overlook a single one of these principles of cavity preparation and succeed in inlay work.

The third cause of failure is that of not understanding how to combine the different hues of color in order to bring out the proper tone.

When we consider that we are endeavoring to imitate a substance in color that is partly organic matter and partly inorganic matter with a substance wholly inorganic in composition, differing in density and colored with different pigments, we can readily understand how difficult it is.

In order to understand the color problems in porcelain, light which is the source of color, must be taken into consideration, and the laws of reflection, refraction, diffusion and absorption thoroughly understood.

As light enters the porcelain part of it is reflected, part refracted, part diffused and the remainder absorbed.

The angle of reflection and the amount of reflected light given off depends upon the contour and the surface gloss, while the angle of refraction and the amount of refracted light which enters the porcelain depends upon the density and texture of the porcelain. Here again we see the importance of fusion.

Unless we obtain exactly the same gloss on the surface of the porcelain as that of the natural tooth, the amount of reflected light will differ from that of the natural tooth.

Unless the contour of the crown or inlay is exactly the same as that of the natural tooth, then the angle of reflection will differ, and the appearance will be changed.

The amount of refracted light must necessarily vary on account of the density of the porcelain differing from the density of the natural tooth, but the nearer the density of the natural tooth structure can be approached, the more nearly will the refraction be equalized.

The normal dentine under a high power glass resembles fine

sand paper in appearance, and in building up the porcelain body that is to represent the dentine, the nearer we can approach that dull appearance, the nearer we can approach the appearance of the natural tooth when our work is completed. By not overfusing the foundation body at any time in the process of constructing a crown or inlay, that dull appearance will be left, so that instead of all of the light being reflected a part of it will be diffused, and the conditions will more closely resemble the conditions of nature.

The remaining property of light to contend with is absorption, and this is one of the hardest to overcome.

And foreign substance placed back of a translucent body will form a dark background, and light will be absorbed instead of diffused, unless that translucent body is thick enough so that the rays of light will be reflected, refracted and diffused before reaching that body.

The thicker and deeper the inlay, the less absorption of light will take place. The cement should be as light as possible, as less absorption occurs when there is least pigment in the cement.

In building on the enamel colors I have been more successful in building them on by sections rather than in layers, because the hues in the underlying layers will affect the color in the overlying layers. For instance, if we attempt to build a yellow over a blue, we do not get a darker yellow or lighter blue, but a green is produced.

To be successful in building up in layers it is necessary to understand thoroughly all color combinations, that is, what effect each color and thickness of that color will have over those layers underlying, and to know just what hue and amount of that hue is necessary to produce the desired results in matching the natural tooth.

In building up in sections I use the foundation body to represent the dentine, usually using a yellow, then build in the gingival third with the color desired, then the middle third, then the incisal third, not having these colors overlap, and only fired to a hard biscuit, finishing the whole by a uniform layer of neutral color to obtain the surface gloss.

In matching a tooth for crown or inlay, experience, judgment and deliberation should be exercised; then when the different hues have been decided upon to bring about the proper tone of the color

of the natural tooth, care in fusing should be exercised, so that those hues will be developed successfully.

The aesthetic value is the chief factor in the use and application of porcelain, and if we have overcome all of the other causes of failure and in the end have not obtained the required color, then the whole operation is a failure.

The fourth cause of failure in porcelain work that I have mentioned is failure in judgment as to where porcelain is indicated and contraindicated. Next to cavity preparation, this has no doubt led to more failures than anything else.

It is unfortunate that the dental profession as a whole are too eager to take up and expand the new ideas without first giving to them the thought that many of these ideas merit. It seems that every new material or process that is given to the dental profession is eagerly grasped. Men become enthusiastic over and advocate them far and wide before the merits or demerits are ascertained. These new ideas many times get into the hands of men who are unable to bring out the best that is in the material or process, and much harm is consequently done the profession and also the public.

In the cataphoric days the profession thought that pain attendant upon a dental operation was a thing of the past, but the "painless dentists" are not nearly so numerous today as they were six or seven years ago. The method was all right, and is all right in some cases, and some of the appliances were all right, but the fault was with the men. It was abused before it was understood.

Today the profession has become excited over the gold inlay. I feel that there has been nothing given the profession in the last decade that is as valuable when conservatively used as the cast gold inlay. But today it is not used conservatively. Many men think it has no limitations, and are placing it in every cavity that they can, large, small and medium, and it will take some time for it to get down on a solid basis as one of the valuable adjuncts of dentistry. The silicate cements are likewise going through their stages of development, and are being used indiscriminately the same as porcelain was, without reference or thought as to the places where they are indicated, and with little knowledge as to the characteristics of the material.

In the beginning of the porcelain craze many men supposed

that the culmination of dental art had been achieved. Some men made the statement that porcelain was limited as a filling material only by the limitations of the operators' skill; that it was indicated in any and every place where gold was. As time went on, more became known about the composition and characteristics of porcelain body, and today with the conservative, conscientious man it merely takes its place beside the many other materials that have served us long and well as a material that has a useful field in dentistry.

Porcelain is not nor has it ever been indicated where undue strength is demanded either in crown or inlay work. We have to depend upon bulk of porcelain for strength in this material, and it is never indicated where there is not room enough between the opposing teeth for a sufficient bulk of porcelain to impart the required strength to the piece necessary to withstand the force of occlusion in mastication. For this reason I have always believed that gold was a much better material in the bicuspid and molars for inlays, and also much better in the molars for crowns than porcelain.

In closing let me say that porcelain is one of the most valuable materials we have in the realm of dentistry today when judiciously and conservatively used. It is a material that to be successful in its application every detail in its use and manipulation must be thoroughly accomplished, and more than this with all of the fine manipulative ability required in the successful performance of an operation in porcelain, good judgment and common sense should always prevail in its application.—*Dental Register.*

THE EVIDENCE OF DESIGN.*

CHARLES CHANNING ALLEN, D. D. S.

When a work is executed with the concepts of beauty, utility and economy in their proper proportion, that work bears with it as its own individual characteristic, the evidence of design. This is its passport; its credential; its hall mark; its justification. In such character it shows whether it is the legitimate child of orderly in-

*Read before the Kansas State Dental Association, May, 1908.

telligence, or the bastard of bungling incompetency. If it was fathomed by an understanding of the requirements and a skill sufficient for their execution, then it must appeal to the mind as answering the requirements of esthetics—the beautiful. Without digressing into the maze of esthetic philosophy, we may avail ourselves of certain explanatory formulæ bearing upon the relationship of beauty and design and beauty as a proof of design. In the realm of esthetics, as in all important phases of metaphysics, we are compelled to refer to Plato and Aristotle. Although in giving consideration to design over mere beauty we cannot accept their dictum that beauty is without definite utility. Beauty carries with it more of the evidence of design than mere utility, for the esthetic or beautiful appeals to one immediately, and does not require a systematic proof along the recognized lines of logic, but establishes itself in the mind of the beholder at once, without proof. Utility alone, as an ultimate end, executed without embellishment, may be, and usually is, vague in expressing its reason for existence and must be studied and its purpose analysed, often laboriously and at tiresome length.

No profession has more use for the esthetic and beautiful than the profession of dentistry; for an artistic restoration is a very large part of our obligation to our patients. A filling may be inserted which abounds in ugly angles and incongruous curves that will answer all the purposes required of it for mastication and preservation; but at the same time be such a positive disfigurement and a consequent detriment to the patient, as to well-nigh offset its usefulness. This same filling, with margins trimmed according to some definite system of mathematical curves, may carry with it such evidence of design and establish such sympathetic relationship between the maker and beholder, that it becomes a thing of beauty and esthetic embellishment. Thus to the mere usefulness of preservation and mastication is added the usefulness of the cosmetic, and we bring to our patient, instead of embarrassment, a sense of presentableness. It is not sufficient in the execution of a piece of dental work bearing full evidence of design, that one should use certain curves and angles, but these curves and angles must be assembled according to the laws of artistic combination, so that they will suggest to the mind of the beholder such continuations as will stimulate

the interest and not satisfy at a single glance. This is the inspiring element of method in all art.

Take the matter of proximal fillings in central incisors. The marginal line on the labial surface which presents itself to the eye should not appear to be the arc of a simple circle, because, instinctively, the arc of the circle carries with it the suggestion of the completed simple figure. While it cannot be denied that there is a design in a circle, yet the more complete design of a different curve, one with an ever-changing radius, is more pleasing to the eye. A filling inserted with cycloidal marginal lines gives evidence of a fuller consideration of the problem involved than is suggested by the arc of a simple circle. Again, if two fillings are opposite in central incisors, the marginal outlines of both should be curves of the same mathematical value. These curves need not be of the same size, but if they are given the same characteristics, they produce the effect of symmetry, and if the curves used are cycloidal, the effect of the two fillings as seen together from a little distance is not that of a circular spot of gold. A circular filling on the surface of a tooth never is attractive or artistic for the reasons stated, and this form should be avoided entirely. For similar reasons, a cervical filling should never have the opposite margins parallel, but the lower margin, while it should not be straight, should be straighter than the upper. Of course, in that class of fillings, where the color and texture of the tooth is sought to be imitated, the marginal effect is of less importance. For if the work is well done, it is assumed that the margins will be inconspicuous, and in this case the best evidence of design would be making these margins studiedly irregular, so that any slight variation of color between the tooth and the filling, would be obscured by the very lack of conventional form.

The skillful architect carefully avoids forms too obvious, but all his lines carry with them a suggestion of ultimate possibilities that fire the imagination of the beholder and establish a community of sympathy between the creating and the perceiving minds and sympathy is the silent language of the soul. Following this principle of method, the architect uses few cubes, circles or spheres, because such forms are complete in themselves and appeal no further to the imagination. Not so with the parabolic curve or the cycloidal curve.

All the beautiful scrolls, frets, and carved capitals avoid the cir-

cle, the curves used being those of progressive change. Nature herself has scant use for the circle. No tree limbs grow in arcs; the reeds, and grasses do not bend in arcs; the rivers do not flow in arcs and even planets do not move in circles. The laws governing artistic combination are not susceptible of easy definition, and probably could not be stated in definite formula as can so many of the natural laws. But men instinctively understand them and those who understand them well belong to the class we call artistic. Those transcendent in this instinct are the geniuses in the arts; they are the reflectors of harmony, the interpreters of the esthetic. That men large in this instinct lived in the very early history of the race is shown by the splendid ruins of some of the oldest temples, which in their majestic decay exhibit marvelous concepts of harmonious combination in line, in pillar, capital and scroll, and today our artists seek them as the shrines of grace and beauty. The artistic masters of all the ages have paid tribute to these monuments. They have stood within the charm of their inspiring influence. Time has defied improvement, and they have remained alone in their majesty, perfect because of their fidelity to the laws of harmonious combination.

An interesting and pertinent example of continuously changing curves is the form of the question mark, which is the most beautiful symbol in the printer's font. Contrast the question mark with the letter O or the angular and uncouth K. The question mark fulfills the artistic requirements and suggests interminable forms. The letter O is complete, simple, and uninspiring. The lines of the letter K could only be extended to unvarying and monotonous lengths, but the question mark is made up of a multitude of changing curves, each a part of an incompletely formed figure which inspires the attentive mind to an infinity of speculation. And it is fitting that this beautiful symbol should stand at the very portal of knowledge, for the first step toward the understanding is always the question:—Why?

The imagination may follow the extension of the parabolic curve throughout its duration, and as long as the imagination does follow it we have the interest of a continuous change to hold the attention. The figure may never be completed, yet no figure in all the geometrical arrangement carries with it more evidence of design.

To starry heavens, most sublime of all natural phenomena, most magnificent of all pictures, most fascinating of all scenes, present

to the awed mind of man no obvious systematic arrangement, but a continuous change, and in this change the most impressive of all our conceptions of order. These wandering worlds which stud the firmament pursue their appointed ways without conflict or argument, each in a pathway mapped in limitless space, in an orbit ever changing, but ever revealing the evidence of Omnipotent design.

To him who has the mind to read, there is no natural order of events without apparent intentional arrangement. In man's relationship to external nature, all things bear a meaning, and if he could but comprehend the hints so numerously set forth, they would open to him the pages of the future and enable him to predict unerringly the course of events.

The whole burden of conveying understanding is not placed upon the creator of any plan, scheme, system or device, but there is also an obligation upon the perceiver. A design may be obvious to one mind and obscure to another. It is just as the perceiving mind chances to be dull, stupid and incompetent, or keen, alert and cultivated. There are varying degrees of designs, just as there are varying minds to perceive them. If this were not true, there would be no incentive to study and mental cultivation. For the mind is susceptible of cultivation as design continues to unfold its more complex forms, and nature only gives up her secrets after the most persistent siege, then tantalizes man with their obvious simplicity. This in itself is an evidence of design.

A mind may see more beauty in a negative sense, that is in the absence of the unharmonious, uncouth and incongruous; but that beauty may convey no message, may appeal to no emotion. This is purely an intellectual perception and is devoid of soul, sympathy or heart, and is the most intensely selfish of all mental manifestations. The keen, incisive, cold and logical intellect, unleavened by the various human passions, good or bad, is a mind incapable of seeing that there is intention and plan in many of the various phenomena of daily living. Mitchell says: "In substituting a mere understanding, for this esthetic and sympathetic understanding, we commit a variety of errors. In the first place, we judge by standards of taste and conduct, which may be perfectly valid standards, but if we have not learnt the spirit from which their value is derived, we use them in

the letter, and are bound to the form of stupidity called intellectualism."

The evidence of design may not unfold itself to the mind in any single phenomena, but when two or more plans, events or phenomena are brought into their proper relationship, the whole scheme may be unfolded and discover to the mind not only the well-planned intent of the whole system, but also the latent beauty of each component part. Unorderly piles of stone, lumber, brick and other building materials reveal no beauty whatever, but when these rough materials are assembled by the artisan and artist, according to the laws of architectural usage, they become beautiful structures, structures which awaken all the finer senses of appreciation. The detached petal of a rose conveys to the mind unfamiliar with that flower no particular suggestion of beauty apart from itself, but when we see the full blown rose we at once perceive the beauty of the petal's harmonious relationship to the other members of that flower.

So from the fragmentary revelations permitted us, we may not read the mystery of life. Through our disconnected experiences, we may fail to see the silken thread of order. We are brought into the world helpless and naked. We are guided through the apprenticeship of youth and are appointed to our manhood's tasks. We are led from the scene and are confronted with the incident of death. Is there a plan in this? If not, how stale and profitless it is. How vain and tasteless is existence. Since men have counted time, the mind has rebelled against the idea of an unplanned universe. Through all recorded time has man sought to rend the veil and fretted at his limitations. Is there a man who does not in his inmost heart believe that when we stand in the full light, radiant with knowledge, we shall see the completed design in all its transcendent glory?

"When the soul,
Advancing ever to the source of light
And all perfection, lives, adores, and reigns
In cloudless knowledge, purity and bliss."

—*Western Dental Journal.*

VALUE OF DIAGNOSIS IN FILLING TEETH.

BY J. V. COUZETT, D. D. S.

In making any filling or attempting any operation or restoration upon the teeth we must first make a careful study of the conditions as they present themselves. Every case that comes to us has some point or points of difference and every case must be studied by itself. We must make a general examination of the whole mouth to determine the susceptibility of the patient, the condition of the fluids of the mouth and the condition of the mucous membrane, for upon these conditions must we depend for a knowledge of how great must be the extension of our cavity for the prevention of recurrence of decay. It will not be necessary, for example, to carry the margins of our cavities quite so far into immune territory in cases that present where there is quite a general immunity and in which the secretions of the mouth are normal and the mucous membranes are in a state of good health, while in cases of extreme susceptibility it is absolutely necessary to give the widest extension possible.

The occlusion must be carefully studied and any abnormalities observed. Particular attention should be paid to the facets worn upon the occlusal or incisal surfaces of the teeth, as these are sure indications of the direction and stress of masticatory movements. If a filling is made without observing these things the operator is liable to get into trouble by reason of the fact that a power is brought into action upon his filling with which he has not reckoned, and consequently has made no provision to meet, and his filling will fail in consequence.

I once made a filling in the mesioincisal surface of an upper right lateral incisor and was very proud of what I thought was a very beautiful filling, but what was my chagrin to have the patient return in a short time with the incisal portion of my filling ground through and the whole filling loose and a complete failure. I now, tardily, made an examination of the occlusion and found that the sharp point of the right lower cupid in its excursions in mastication trailed over the incisal surface of the upper lateral in such a way that it wore a groove in the incisal surface, which I had not noticed by reason of

the decay of the tooth. I remade the filling, ground off the point of the offending cuspid and had no further trouble.

In the same way we sometimes find long, sharp cusps upon bicuspids that fit into deep sulci of the occluding bicuspid. In restoring these it is well to relieve the occlusion by grinding off a portion of the antagonizing bicuspid. Not only must we observe the normal occlusion and the natural excursions of the teeth during mastication, but we must carefully look for signs of abnormal excursions of the teeth during sleep, as in the habit of grinding the teeth at night, or as the result of nervous habit during periods of excitement. I made a filling for a lady in the incisal surface of an upper right cuspid and it was ruined by the habit of grinding her teeth at night. It did not seem possible that she could reach that particular place with any of her lower teeth, but after trying for some time I found that a cusp of one of the lower teeth did fit into it during a specially peculiar motion of the jaw. We fixed that cusp so it would not do the mischief again, and another lesson in studying occlusion was learned. There are some cases, however, that seem to defy all of our precautions in this respect. One case comes to my mind, that of a lady with a highly organized nervous temperament, who presented with the lingual and incisal surfaces of her teeth very badly ground down. She asked for a porcelain restoration, which, of course, would have been the height of folly, for porcelain would not have stood the stress of that tremendous strain for fifteen minutes after she got into action some night. During the day time and upon our examinations I had never been able to make her close her teeth in such a manner as to reach those fillings, but she presented herself after a time with a groove running mesiodistally clear across those fillings and it was always done at night. In this particular case I built the lingual surfaces and over the incisal surfaces of both central incisors with platinized gold, and although a deep groove has been worn in both fillings they are still doing good service.

Not only must the direction and peculiarities of the occlusion be observed, but the strength thereof must be carefully noted. For if we place a filling in a tooth upon which there is great stress and do not anchor the filling sufficiently to resist the force that is brought to bear upon it, the filling will fail in time either by being bodily crushed out of the cavity or by having its form so changed by

the flow of gold under stress that we shall have a recurrence of decay. In many of these cases it will be noticed that there has been a wearing of the gold upon some portion of its occlusal surface, and that surface not being heavy enough has not only been worn under the stress, but there has been a "flowing" of the entire mass of gold in the direction of the stress, consequently there has been a slight change in the shape of the filling and a recurrence of decay due to leakage. The remedy is to note the direction and strength of the stress of mastication and then at those points that must resist heavy occlusion cut wide and deep that you may have a large mass of gold to resist the stress at that point. Again we must note in what portion of the tooth our cavity is located, as greater strain comes upon certain portions of the tooth than others. For instance, we know that the mandible in mastication normally closes inside of the superior maxillary. The lower teeth closing inside of the upper teeth, therefore, the lower jaw exerts a force toward the mesial surfaces of the teeth. The stress therefore comes upon the mesial surfaces of the upper teeth and upon the distal surfaces of the lower teeth. In making our filling, then it behooves us to anchor more firmly the filling in the mesial surfaces of the upper teeth and in the distal surfaces of the lower teeth than in the opposite surfaces of the same teeth. We should also note the masticatory habit in the linguo-buccal occlusion, for nearly all cases, by closely observing the facets worn upon the surfaces of the teeth, we will find that each individual commonly exerts more stress in one direction than in the other. That is, he may commonly chew his food with a movement from right to left, or from left to right. In many cases it is important to know which way the greater stress is liable to come, that a buccal or, it may be, a lingual wall may be protected from a stress that may be too great for it to bear. I find that it is usually the lingual cusps of the right upper and the left lower teeth and the buccal cusps of the left upper and right lower teeth that suffer the most, indicating that the majority of cases that have come under my observation habitually grind their food with from right to left movement. This may be but a coincidence, but it is an interesting one and one that will bear further observation. But in every case involving any considerable portion of the occlusal surfaces of bicuspids and molars it is wise to carefully note this particular form of stress, and then protect any

weak cusp that may have to bear the brunt of that stress. Failure to do so will invite the destruction of a cusp, an accident that is peculiarly unfortunate, as it nearly always means the loss of the crown of the tooth.

Again it is our duty to note the condition of the pericemental membrane, for upon its condition must depend, in a large degree, our choice of filling material. We know, or should know, that it requires a considerable force to properly condense gold foil, and if we attempt a large gold restoration in a tooth that is decidedly "lame" as a result of pyorrhea, or some form of pericemental irritation, or in a tooth that has no occlusion, and as a result has a "soft," tender membrane, we will find before we go very far in the operation that the patient is suffering intensely under the strain of malleting, and if we persist we will probably have a very sore tooth if we have not permanently disabled it. In such teeth a large gold filling is decidedly contraindicated. To the average man all this may sound rather nonsensical, as he will think that all of these observations will take more time than it would take to make a good-sized filling. On the contrary, it will help you make your fillings more quickly and surely more perfectly. At first it will take time, I admit, but by continued practice and observation all of these points will be noticed in a glance and far quicker than it takes to tell. Then with the conditions in mind, knowing the corrections that are to be made, there immediately arises in the mind's eye a picture of the desired result, and any man that commences any work, be it the plan of some great cathedral or skyscraper office building, a picture or a statue, my lady's bonnet, or your latest suit of clothes, or, forsooth, an operation upon any particular tooth, and has not in mind a perfect picture of the finished product, is going either to make a failure or is going to spend far too much time in its accomplishment. Then if you have it not, first form the habit, and do it now, of knowing what you are going to do before you do it, know how you are going to do it, and know why. If you do this, you see every step of the procedure mapped out before you, you know just the instrument that you need to accomplish each step, and quickly and surely each steps succeeds the other until in time that is a surprise to you and a pleasure to your patient, the operation is completed.—*Dental Digest.*

WATCHMAN—WHAT OF THE NIGHT?

Reference has frequently been made in our literature, particularly in recent years, to the spectacle of so many dentists approaching old age without the necessary means to take care of themselves comfortably after their days of useful practice are at an end. This matter cannot be agitated too frequently, if we are to improve the material status of the profession and place its members in the way of attaining independence. Not by any means that it would be desirable for a man to slave and economize and be niggardly with the idea of hoarding up something so that he may retire and quit work and rest on his oars after a few years of activity. It should be a pleasure for a man to work as long as his effectiveness is unimpaired, or in other words, as long as he can be useful; but the pitiable spectacle is often presented of a man being obliged to struggle along and try to earn the bare necessities of life long after he has the ability to render the public good service and when the public has learned his limitations and are beginning to turn the cold shoulder toward him. Too frequently he finds himself bereft of even the small patronage which his feeble strength would permit him to care for, on account of the distrust which age usually brings in any pursuit demanding technical skill for its practice.

The lesson of all this is that the young man or the man in active practice should look into the future and so conduct his affairs that he will have something when age overtakes him that will make him independent. And this is not such a very difficult thing to do, even in the practice of a profession which is supposed to bring such meager financial returns as dentistry. Most of the poverty among dentists is due to sheer carelessness of thoughtlessness, the failure to estimate the true value of a dollar and neglect of the necessary forethought to plan one's income and expenditures so that the balance will be on the right side at the end of each year. It seems such a hard lesson for some young men to learn that the future is shaped so positively by the present that the conduct of the present becomes a very important consideration. The old adage, "As ye sow, so also shall ye reap," applies to this question as well as to one of abstract morals, and it is well for every man to pause in the fullness of his powers and ask himself—what of the night?—the night of life, or the night of illness, or the night of adversity when a man's only resources

are those which he has provided for himself in palmy days. It is worth thinking over—meaning as it often does so much for the material comfort and mental peace of one's declining years.

C. N. JOHNSON, *in Bur.*

AN EDITOR'S OPINION OF OUR PROFESSION.

Boston welcomes the dentists who meet here in convention this week. They represent a profession which has made tremendous advances in the last generation and is today accepted by science as an essential factor in the fight against disease and death.

One has only to visit the back New England farming country and the Canadian provinces to see everywhere mouths disfigured with decaying teeth, fertile breeders of disease, or the hideous false teeth which can be told from the real as far as they could be seen. Decaying and uncared for teeth which do not permit food to be chewed cause indigestion and malnutrition and the festering stumps, which make the mouth a sewer which pours into the system all the diseases of food and air, are still found where the modern dentist has not penetrated. Bridge work and other mechanical improvements of the dental profession give no one, where dentists are to be found, an excuse for an unclean or ugly mouth.

As the relationship between good teeth and health become better known, the dentists' profession increases in importance. Within the memory of persons not yet old, when a tooth ached, some people went to the family doctor, who guessed which one it was, pulled it out, and if the ache stopped, called it a good job. The dentists were persons without any professional training whatever, blacksmiths, watchmakers, and especially barbers, who practiced to a large extent as a superadded means of livelihood. Mere tooth-pulling requiring manual dexterity and muscular strength without anatomical knowledge or surgical skill constituted surgical dentistry.

The old fight of the medical practitioners against allowing anybody but a duly qualified medical man to appear as holding a diploma which would put dentists on the same footing as themselves was successful for years, and it was not until 1858 that the dental certificate of the College of Surgeons of England made dentistry a profession.

The keenness and vigor with which dentists have joined in the attack on disease will be shown in the convention proceedings this week.—*THE BOSTON TRAVELER—Editorial.*

A PROTEST AGAINST OPEN-FACED CROWNS.*

BY FREDERICK C. ROYCE, D. D. S., BROOKLYN, N. Y.

In the construction of a bridge where one of the anterior teeth is to be used as a support, we are confronted with the question, "What kind of a crown shall be used?" There are two important points to be considered, namely, usefulness and appearance; as we not only want a crown that looks well in the mouth, but one that is also serviceable. We all dislike very much to see gold crowns on any of the anterior teeth, as they are anything but aesthetic in appearance, and, of course, would not use one, at least not for our lady patients. In the mouth of a man who has a moustache the all-gold crown might be used and not be very noticeable.

There are many who object to the removal of the pulp to make use of a Richmond crown for an abutment, and being unwilling to use an all-gold crown resort to the open face crown. Many dentists who are skilful mechanics make use of this style of crown, still I have no doubt that we all have seen cases where the use of them has resulted in failures. It is claimed by those who use this method of crowning that if a perfect adaptation of the gold to the shape of the tooth is obtained and the edges are thoroughly burnished down the cement will not wash out. Theories may be advanced and new methods introduced for which much is claimed, but clinical experience is the only true test. From my experience I am firmly convinced that it is not possible to make an open-faced crown, the cement of which will not be acted upon in the course of time by the fluids of the mouth.

In the preparation of a tooth to receive a crown it must be ground sufficiently to allow the band to slip over the tooth in order to fit at the neck. This will of necessity give a large surface that will be much more rapidly acted upon by decay. After the cement is gone, sooner or later decay will begin under the gold, and it works so insidiously that suddenly the patient awakens to the fact that there is trouble with the tooth thus crowned. Upon examination it will be found that decay has begun, and that it is necessary to remove the crown. Perhaps at the end of the bridge is a full gold crown

*Read before the Institute of Dental Technique, April 28, 1908.

which it is necessary to slit open and pry off before the piece can be removed, and then what a sorry sight is presented! The tooth under the full crown is probably in as good condition as when crowned, while decay has taken place under the open-faced crown until possibly the pulp is nearly or quite exposed. Not only that, but as a rule the dentin in such conditions is so very sensitive that it is almost impossible to work on it, even after having used obtundents. Now what shall be done with such a case as this? Perhaps it is decided to devitalize the pulp and use a Richmond crown, but upon a closer examination it is found that decay has extended above the gum margin either on the labial or lingual surface.

This may seem like an exaggerated story, but it is simply a statement of what has taken place in many mouths where this method of crowning has been used. Had the pulp been devitalized in the first place the bridge might have been anchored with a Richmond crown and the root prepared in just the shape the operator desired, and the result have been a permanent piece of work. With the surface of decay extending up under the gum margin, it is far more difficult to prepare the root and adjust the band to make an aesthetic as well as a lasting piece of work.

I have given open faced crowns a fair test, making them over metal dies, using 22-karat gold, annealing well and burnishing the edges as close to tooth as possible. The result with me was always the same; as a permanent piece of work it was a failure, and in every case the bridge had to be removed and an anchorage made in some other way.

I have been called upon to remove bridges where the trouble was solely with open-faced crowns, the anchorage at the other end being a full gold crown always found in perfect condition. The workmanship in all the cases, as far as I could see, was good and satisfied me that they had come from the hands of good operators.

Now, why are all these failures? It cannot be that it is the fault of the operators in all these cases, as their other styles of crowns were doing splendid service and the failure was always with the open-faced crowns. There is only one conclusion that can be drawn in the matter, and that is, the method is at fault.—*Brief*. Pages 493-494.

THE DAY OF FADS IN DENTISTRY.

BY FRANK W. SAGE, D. D. S., CINCINNATI, OHIO.

Someone has said that dentists are the most credulous of all professional men, meaning, no doubt, that they readily adopt every specious suggestion, work it to the limit, finally dropping it in disgust, perhaps to take it up again after the fever of their earlier enthusiasm has died away, in order to apply it in a comparatively small number of instances in which it is likely to prove useful.

The truth is that there has always been a day of fads in dentistry. Nearly half a century ago the profession went wild over the rubber dam and cohesive foil. Up to a comparatively recent time scarcely anything else was talked about in our dental societies. The facility with which broken corners of teeth could be contoured, whole crowns restored from the gum up, seemed of such paramount importance that ambitious dentists entirely abandoned plate-making, devoting themselves wholly to filling teeth with gold. It was proclaimed that "any tooth worth filling at all was worth filling with gold"—a proposition possibly born out of overweening pride on the part of a few superior operators. It was predicted that before long the profession would see an end of amalgam, tin, gutta-percha, and all other fillings but gold. Clamps of the most tortuous forms and the most tortuous capabilities were devised by the handful. Sets of pluggers costing a small fortune were introduced and to be recognized as a "fine operator" was the highest ambition of every aspiring dentist. The few who ventured occasionally to intimate that "soft foil" might still be used in certain cases were ridiculed as old fogies, while indifference to the prosthetic branch of dentistry grew to such an extent that the dental colleges culpably neglected this most indispensable branch of instruction.

But I was speaking of the credulity of dentists. Not so many years ago the "lacto-phosphate of lime" treatment for exposed pulps roused the profession to fever heat. It was proposed to apply a paste to any exposed nerve, seal it in with cement, and look for a deposit of secondary dentin before long over the point of exposure. It was averred that the constituents of this compound would be appropriated by the pulp and assimilated, as food is digested and assimilated in

the digestive tract. Particular stress was laid on the assimilation. The matter was sedately discussed at length in societies everywhere. The question was asked in all seriousness: Should not a dentist be ruled out of court—that was the idea, at all events—who kills a nerve of a tooth? In desperate cases it was proposed to amputate the putrescent part of a pulp, bringing the severed parts into apposition, thereby inducing healing by resolution to save the pulp. Dentists who were said to have performed successfully this marvelously delicate operation were mentioned by name.

One of the curious facts in the history of our profession is the facility with which accepted doctrines of one decade may be dropped in the next. In due time, the fever of enthusiasm over cohesive foil having died away, it began to be questioned whether after all non-cohesive foil had not a place in the dental cabinet. Men who had bought a hatful or so of clamps gave away all but some favorite two, possibly three, or used none at all. Some were bold enough to proclaim renewed faith in amalgam, if rightly used, and some of the compassionate had a word to say about the unpromising future of the dentist who turned a deaf ear to the wailings of the unhappy patient. Laboratories were reopened, and though far from conceding that operating was the only part worth while in dentistry and that any boy could make plates, men arose who declared that any patiently disposed person could become a fine operator, if he stuck to it long enough, but that it took a genius to master the difficulties of prosthetic dentistry.

Thus the tide ebbed and flowed, year after year, decade after decade. The "saving remnant" of which Matthew Arnold speaks—of level-headed, common-sense men in the profession, has time and again saved dentistry from being wholly carried away by an interminable procession of fads. They advised the use of arsenic on hopelessly involved pulps; they pointed to the obvious fact that many cavities in teeth could not be filled in accordance with any plans and specifications of text-books, and bluntly repudiated such fallacious teachings as that "Teeth which are worth filling at all are worth filling with gold." They even got up in dental societies and cross-examined prominent members, presenting papers or discussing papers who were suspected of seeking admiration for achievements in dentistry not thoroughly confirmed by actual experiences in their daily

practice. These are some of the instrumentalities whereby the profession has been recalled from high-flying fancies to the hard actualities of everyday practice.

Of late we discover symptoms of recoiling a trifle from gold-inlay practice. Some dentist who is in the habit of taking things at second hand reads in a dental journal that Dr. So-and-so, of national reputation, regards the gold inlay as the "most important improvement in dental art in the last quarter of a century." Thereupon he locks up his pluggers and devotes his attention solely to gold inlays. He has already discovered that the porcelain inlay, fascinating as a Sousa two-step in all the details of its construction, has not, cannot have, an ideally perfect edge; that it will stand little stress, and that, while it may resist his mightiest efforts to prize it out, one day it will miraculously "pop out of its own accord"—sometimes the very next day, if the patient's word is to be credited. Yet the consideration of the possibility of burnishing down the edges of a gold inlay so as to prevent intrusion of cement-solvents is accepted as a sure guarantee of the success of the gold inlay.

The truth undoubtedly is, as regards both porcelain and gold inlays, that they have their (limited) place. We must have porcelain for conspicuous cavities; we must have gold inlays for large, compound cavities, for deep approximal cavities susceptible to proper shaping. It is perhaps too much to assume that the gold inlay, that any inlay, is better than a gold filling which can be made; or that either the patient's time or his convenience is always best subserved by employing the inlay. To properly prepare a cavity for an inlay requires much time in every case, but the very simplest, and in consideration of the more extensive cutting away it is probably not much less trying to the patient than filling with foil. How many times has every one of us assumed that he could easily prepare a cavity for an inlay in twenty minutes, only to discover, when finally he has it exactly as he conceives that it should be, that he has been at work one hour, two hours even!

We dentists are prone to go to extremes in all things. Many a dentist today is wishing he had used more care and foresight in inserting bridges; that he had made fewer bridges. Yet bridges have their place. Many a porcelain inlay has disappointed dentist and patient; many more patients than dentists are aware of, quietly apply

to another dentist after two or three failures with inlays. We must be careful not to lose patients through failing to use inlays; not to lose them through lack of judgment in selecting cases for inlays. These are questions requiring the dentist's most careful, thoughtful consideration. Dentists are afraid not to do that which they learn other dentists are doing. They dread being considered old fogies. Yet too many, especially of the old practitioners, are inclined to pre-conceptions which impel them to denounce new methods and new systems, on grounds which may be theoretically correct yet are practically misleading. This fact has been so often proved in the past that it behooves dentists to be extremely careful in condemning new methods, new theories, without actual trial. In dentistry as in everything else, theory and practice do not always hang together. That which will not do at all on paper, will often do well in the mouth, the reverse also being true.

Table clinics are often misleading. The vital question always is: How would that do in the mouth, in practical, every-day use in my patients' mouths? Marvelous schemes for dovetailing cavities for inlays are shown in detail in drawings illustrating the uses of inlays—porcelain and gold. Clinicians, not themselves practical dentists, leave it to the innocent inference of the unwary dentist that cement will unite the inlay with the tooth as glue unites two blocks of wood. Dentists rush into print with suggests for newly devised operations which are mere figments of fancy, untried, wholly unconfirmed by experience. Table clinics oftentimes show faultless operations which it is practically impossible to perform in the mouth.

At one of our largest recent dental meetings of the reason, no less than a score of clinics on gold inlays was given; not one on porcelain inlays. Four or five years ago clinicians could not find space for their demonstrations of porcelain inlay processes. Yet the porcelain inlay is positively indispensable. So, too, beyond question, is the gold inlay. But the dentist who expects any inlay to stay by virtue of an impalpable layer of cement, and—as regards the gold inlay—of an overlapping, burnished edge, is liable to disappointment. Unless a dovetail is attainable, nothing can with certainty be predicted as to the retention of any inlay.

If we must have fads, let us master them, not be mastered by them.—*Dental Cosmos*.



SOUTH DAKOTA STATE BOARD OF DENTAL EXAMINERS.

The next meeting of the South Dakota State Board of Dental Examiners will be held at Sioux Falls, S. D., January 12, 1909, beginning at 1:30 sharp, and continue three days. All candidates must bring appliances and materials necessary to do all kinds of filling, crown and bridge work, and articulate a full upper and lower set of teeth. A recent ruling of the board makes it compulsory with all candidates to have their examination fee of \$10 in the hands of the secretary before January 5, and positively no candidates will be received who have not thus complied with said rule.

G. W. COLLINS, Secretary.

INDIANA STATE BOARD.

The next regular meeting of the Indiana State Board of Dental Examiners will be held in the State House at Indianapolis, beginning Monday, January 11, and continuing four days.

All applicants for registration in the state will be examined at this meeting. For further information, blanks, etc., apply to the secretary,

F. R. HENSHAW,
Middletown, Ind.

INSTITUTE OF DENTAL PEDAGOGICS.

The sixteenth annual meeting of the Institute of Dental Pedagogics will convene in the Planters House, St. Louis, Mo., December 30 and 31, 1908, and January 1, 1909. All teachers in dental colleges are cordially invited to attend and take part in the proceedings. An excellent program has been prepared and reduced rates arranged for, particulars of which can be had from Dr. D. M. Gallie, chairman of the executive board, 100 State street, Chicago.

B. E. LISHER,
Secretary-Treasurer.

AMERICAN SOCIETY OF ORTHODONTISTS.

The American Society of Orthodontists held its eighth annual meeting in Washington, D. C., November 6 and 7. Nearly a hundred members were present. Papers were read by Dr. Clarence J. Grieves of Baltimore, Dr. Milton T. Watson of Detroit, Dr. Alfred Rogers of Boston, Dr. Varney E. Barnes of Cleveland, Dr. Harris P. Mosher of Boston and Dr. S. Merrill Weeks of Philadelphia. Dr. C. A. Hawley was the presiding officer, and the following were elected officers for the coming year: President, Dr. F. M. Casto, Cleveland, Ohio; vice president, Dr. Frank Gray, Colorado Springs, Colo.; secretary and treasurer, Dr. F. C. Kemple, New York.

THE NORTHEASTERN DENTAL ASSOCIATION.

The Northeastern Dental Association held its annual meeting in Hartford, Conn., October 22-24. A resolution was adopted urging that the trustees of the Thomas W. Evans fund found an independent post graduate dental school rather than to use the fund for a school connected with an institution for undergraduates. The resolution was presented by A. J. Flanagan. Dr. James McManus called attention to an effort to put up a memorial to Dr. H. H. Hayden, the first professional teacher of dentists. He told of the work done toward the memorial by the Hartford Dental Society and asked for a delegation of dentists to attend the unveiling of the monument which will be placed in the town of Windsor. It will probably be unveiled next June and a large delegation of dentists of New England was urged to attend. He also offered a resolution appropriating \$150 from the treasury of the association toward arranging for the commemorative exercises. The resolution was passed without dissent. The following were elected as officers for the ensuing year: President, Dr. James E. Power, Providence, R. I.; first vice president, Dr. Ned A. Stanley, New Bedford, Mass.; second vice president, Dr. Henry A. Kelley, Portland, Maine; secretary, Edgar O. Kinsman, Cambridge, Mass.; assistant secretary, Charles F. Krepel, Forest Hills, Mass.; treasurer, Dr. F. T. Murlless, Jr., Windsor Locks; librarian, Dr. Charles H. Riggs, Hartford; editor, Dr. David Manson, Burlington, Vt.



MISCELLANEOUS

CEMENTS.

We know that at present there is no cement on the market that is impervious to moisture and will not shrink; one thing or the other—it will either shrink or take up moisture.—*Dr. F. W. Getting, Review.*

FOIL VS. INLAYS.

I can confidently say that my observation tells me that the average life of a gold foil filling made by proper methods in a correctly prepared cavity will be much greater than the average of the best gold inlays.—*Dr. C. E. Woodbury, Review.*

PLACING AND CONDENSING GOLD.

Let me say to you that there is nothing that I know of that so greatly assists us in making tight margins as placing and condensing the gold from the lingual wall toward the buccal wall, keeping it fairly flat the entire way across and building it up so as to wedge it tightly.—*Dr. E. K. Wedelstaedt, Dominion Dental Journal.*

A FILLING HARDNESS.

A filling does not need to be any harder than what will stand the wear and retain its shape, and that can be done just as quickly and easily with an oval-faced hand-plugger as with any automatic or electric, and gives none of the bad results.—*Dr. Mills, Dominion Dental Journal.*

FOR BROKEN DOWN ROOTS.

A badly decayed root in which a post cannot be fitted properly can be restored to years of usefulness in the following manner: Press a cone of impression wax into the root, chill, remove, and trim. Then replace it, heat a pin metal post and press it home into the root through the wax, chill, and trim again. Cut off the excess of the post, attach a sprue wire, and cast. This gives a perfect fitting post and diaphragm on which a facing may be attached.—*F. B. Jahr, Western Dental Journal.*

KEEPING THE MOUTH DRY.

The following is an original but sure method of keeping the teeth dry while setting a lower bridge or crown. Place small pieces, about the size of pecan nuts, of absolutely bone-dry plaster of paris under the tongue and between the gum and cheek.—*Dr. Herbert J. Pratt, McCook, Neb.*

INLAYS INDICATED.

Inlays are indicated principally in abrasions, large contours, and where a tooth is subjected to undue stress in mastication, but as a tooth preserver, they are inferior to fillings, either gold or amalgam, if the same delicate care is used in the preparation of the cavity and lined with cement.—*Dr. O. H. Simpson, Dental Era.*

PORCELAIN WORK.

The porcelain work should be done on a bench or cabinet, entirely separated from the other work of the office, that it may be scrupulously clean at all times. To be successful, no dirt or oil of any kind or amount should come in contact with the porcelain body or the platinum upon which the porcelain body is to be placed for fusing.—*Dr. C. J. Lyons, Register.*

ACIDITY OF SALIVA.

Saliva from the parotid gland is always more acid in reaction than the saliva from the other salivary glands, and the submaxillary gland alone normally secretes approximately three times as much saliva as the parotid gland, which is a potent factor in lowering the acidity of the mixed saliva over the higher acidity of parotid saliva.—*J. Newton Roe, Review.*

MIXING CEMENT.

In mixing the cement for setting the inlay, it must be borne in mind that the inlay fits the cavity very closely, and consequently the cement must be thin, or there will be trouble in getting the inlay to place. The cement should be thoroughly spatulated, and both the cavity and cavity side of the inlay should be covered with cement before inserting the inlay.—*Dr. M. V. Hopkins, Register.*

A FRENZIED FAD.

My gold fillings, after a year's service, looked better to me than my gold inlays, and I am not a novice with gold inlays. I know full well it takes nerve to say that which may ever so lightly intimate anything derogatory to so frenzied a fad. I know the vast field there is for the gold inlay, but when it comes to throwing away my pluggers, mine are right where I can reach them and few are the days when they are not used.—*E. S. Barnes, Review.*

MIXED GOLD FILLINGS.

Wherever we wish much strength, as we do for fillings in the incisor and cupid teeth, we should obtain the full strength of cohesive gold, and not use combinations of non-cohesive and cohesive gold. This may be radical teaching but I have in my collection of fillings perhaps a thousand fillings which have failed, and I have a record of the failures. Besides this, I have some five hundred of perhaps another thousand, of casts of conditions in which there are many gold fillings.—*Dr. E. K. Wedelstaedt, Dominion Journal.*

TREATMENT OF PUNCTURE FROM INSTRUMENTS.

I have been punctured with instruments many times, and it is my invariable custom to drop the instrument at once and grasp the injured member above the puncture and hold my finger in that position until it bleeds profusely. I get as much blood out of it that I can and possibly that is the best thing that can be done under the circumstances, except also to apply carbolic acid to the wound.—*J. G. Read, Review.*

SILVER NITRATE WITH CEMENT FILLINGS.

A cement filling, zinc oxyphosphate, placed upon a surface treated with silver nitrate, will, for some reason, last a great deal longer and will be a great deal better mass than the same mass not having the peculiar effect it gets from this film of silver albuminate. A great many, no doubt, have seen the effect of silver nitrate upon a surface which has been infected to a very slight depth. That in time will become a polished black surface and further decay will never result. Now, if in deeper cavities we can make partial preparation and apply silver nitrate and have it last longer than otherwise, it is worth knowing.—*Dr. W. V. B. Ames, Review.*

CEMENT FILLINGS.

Cement is a rational tooth filling, for the following reasons: It adheres to cavity walls, supports frail enamel, arrests decay, and withstands the stress of mastication. It has its imperfections, such as opacity, porosity and solvency in the fluids of the mouth. A cement filling, with a gold covering or shield restoring the tooth to its normal shape, is a rational method of filling, for it combines the good qualities of gold, which has a strength and resisting power, and is non-corrosive.—*Dr. McF. Crow, Digest.*

SILICATE CEMENTS.

Silicate cements are superior to the oxyphosphates in insolubility and are of beautiful appearance. They are compatible and readily adaptable to cavity walls and margins. They have not been under observation long enough to enable us to make positive statements as to their permanence. They may, however, be inserted in visible cavities not subject to special stress and in mouths which can be kept under observation until such time as their capabilities are more thoroughly determined.—*Dr. J. O. McCall, Forum.*

ENLARGING PULP CANALS.

The usual directions given for enlarging pulp canals by first using a small instrument, and then the next size larger, and so on until the enlargement is satisfactory, is not mechanically the best way. From the beginning to the end of the operation the instruments used are always under strain. The inventor of the Morey pulp-canal drills suggested a better way. First use the largest that is intended to be used, and with it drill in as far as deemed prudent; then take the next size smaller, and so on until the operation is complete. By this latter plan the smaller and more delicate instruments have much less work to do, they are less liable to clog, they are free to follow slight deviations from a straight line, and the operator is better able to see what is going on. Although this idea was given to the profession more than a score of years ago, it is seldom quoted, and its mechanical advantages do not seem to have been appreciated. A trial of the two methods will demonstrate that the Morey plan favors smooth cutting, rapidity, freedom from accidental fracture of instruments, and a longer life to the cutting tool.—*Dental Brief.*

PERSONAL AND GENERAL

Dental College Fire.—The New Orleans Dental College was entirely destroyed by fire November 14.

Dentist Insane.—A prominent dentist in Columbus, Ohio, has been adjudged insane and is in the State Hospital.

Scott-Decker.—Dr. Hiram Scott, a dentist in Hamilton, Ohio, and Miss Ella Decker, of Dayton, were married November 4.

Fire.—Drs. Bushnell & Dunlap suffered the loss of \$1,000 when their laboratory was destroyed by fire October 25, at Toronto, Can.

O'Neal-Winn.—Dr. O. J. O'Neal, a dentist in Chattanooga, Tenn., and Miss Sarah Winn, of Clarksville, Tenn., were married October 27.

Musselman-Hoke.—Dr. Jay Ellis Musselman, a dentist in Fairfield, Pa., and Miss Ruth Hoke, of Emmitsburg, Pa., were married November 4.

Good-Campbell.—Dr. Robert Good, a prominent dentist in Chicago, and Mrs. Loretta Campbell, of Toronto, Can., were married in Crown Point, Ind., recently.

Dentist Freed.—A prominent dentist in Roanoke, Va., has been acquitted in a sensational trial of alleged criminal assault of a patient while under the influence of chloroform.

Dental Library.—The Will-Grundy County Dental Society, at its recent meeting, formulated plans for installing a reference library of dental books and periodicals. Drs. Patterson and Lotz were appointed as a committee.

Missouri State Board.—At its meeting held in Jefferson City, October 28, revoked the license of a St. Louis dentist for unprofessional conduct. It also held examinations and of a class of 29 but 12 were authorized to practice in the state.

Copper Country Dentists Organize.—The dentists in the copper country in Michigan have effected an organization and elected the following officers: President, Dr. W. A. Courtney, Hancock; secretary, Dr. R. H. Banks, Hancock; treasurer, Dr. W. S. Whistler, Calumet.

Removals.—Drs. George Vail from Chicago, Ill., to Marshall, Mich.; H. H. Hillman from Jackson, Mich., to Oklahoma; B. H. Teague from Augusta, Ga., to Aiken, S. C.; George Wells from Fairmont, W. Va., to Cameron, W. Va.; C. H. Frink from Fernandina, Fla., to Jacksonville; Herm Beckstrom from Butte, Mont., to Great Falls; K. Hartsell from Randleman, N. C., to Greensboro; F. P. Davis from Bluffton, Ga., to Blakely.

Cawley-Sisco.—Harry Cawley, a senior student at the Indiana Dental College, and Miss Hazel E. Sisco, of Connersville, Ind., were married in Louisville, Ky., November 2.

New Society in Kentucky.—The Eastern Kentucky Dental Association was organized at Prestonsburg November 4. Dr. R. H. Leete of that city had been selected by the Kentucky State Society to organize the local society.

Northern Illinois Dental Society held its annual meeting in Freeport recently and elected the following officers: President, Dr. H. G. Logan, Aurora; vice-president, Dr. G. T. Banzet, Chicago; secretary, Dr. F. H. Bowers, Freeport; treasurer, Dr. C. L. Smith, St. Charles. The next meeting will be held in Elgin.

Northwest Missouri Dental Association held its annual meeting November 9-10 with an attendance of nearly 100. The following were elected as officers: President, Dr. J. T. Fry, Moberly; vice-president, Dr. R. H. McKinney, Hannibal; secretary-treasurer, Dr. R. W. Burgess. The next meeting will be held in Hannibal.

Robberies.—Drs. A. B. Chapman and C. C. Evarts, Indianapolis, Ind.; loss not given. William Kelly, Brooklyn, N. Y.; loss \$35; thief arrested. David Burdge, New Haven, Conn.; loss \$150. Six Utica, N. Y., dentists. D. J. Vedder; loss \$25. H. H. Tompkins; loss \$60. F. T. Simmons; \$50. H. M. Clapp; loss \$25. R. Frank Jones and E. P. Grove; loss not given. Sayre & Brooks, Gloversville, N. Y.; loss \$25.

Champaign-Danville Dental Association held its annual meeting in Champaign November 10. Papers were read by Dr. Warner and Dr. McCann and the following were elected as officers for the ensuing term: President, Dr. H. E. Davis, St. Joseph; vice-president, Dr. E. M. Bush, Danville; treasurer, Dr. J. L. Rideout, Danville; secretary, Dr. George C. McCann, Danville; librarian, Dr. O. W. Hickman, Danville. The next meeting will be held in Danville.

Eastern Illinois Dental Society.—The Eastern Illinois Dental Society held its fourth annual meeting at Paris, November 17-18. Papers were read by Dr. S. A. Campbell, of Mattoon; Dr. W. T. Lamb, of Casey, and Dr. E. H. Hickman, of Arcola. The following were elected as officers for the ensuing term: President, Dr. J. B. Taylor, Marshall; vice-president, Dr. E. H. Hickman, Arcola; secretary, Dr. T. A. Fulton, Charleston; treasurer, Dr. R. F. Campbell, Chrisman; librarian, Dr. S. E. Miller, Toledo.

NECROLOGICAL.

Dr. W. L. Hood, a dentist of Nicholson, Ga., died November 17 of heart disease while in the act of extracting a tooth for a patient.

Dr. Adolphus Wegenroth, a dentist in Roxbury, Mass., died on the way to the hospital. He was taken ill on the street. Deceased was fifty-eight years old and was a graduate of Tufts College Dental School.

Dr. A. R. McLaughlin, a dentist in Charlotte, N. C., died October 29. Dr. McLaughlin was a graduate of the Baltimore College of Dentistry, '98, and was 32 years old.

Dr. James Grant, a dentist in Abingdon, Tenn., was found dead by the roadside November 7 with his skull crushed from a blow and is believed to have been murdered.

Dr. John T. Wisner, a dentist in Wooster, Ohio, died November 8. He was 75 years old and had lived in Wooster for 50 years.

Dr. W. T. Allen, a dentist formerly located in Huntsville, Ala., died recently in Texas.

Dr. Thomas Cromwell Royce, a dentist in Middletown, N. Y., died November 10. He was in his eighty-fifth year and a graduate of the Baltimore Dental College in the class of 1853.

Dr. J. W. Garner, a dentist in Muncie, Ind., died November 15 after one week's illness with pneumonia. Dr. Garner was 59 years old and had lived in Muncie for 39 years and at the time of his death was associated with his son, Dr. Frank B. Garner.

Dr. Charles Otis, a dentist in Barrington, Ill., died November 18 from cancer. He was 67 years old and had practiced many years in Barrington.



DENTAL PATENTS

Fig. 1.

902,463. Dental Apparatus. Frank Armstrong, Dunedin, New Zealand. Filed February 8, 1907. Serial No. 356,346. 1. Dental apparatus comprising a receiver for a drug solution, means for heating said solution, means for controlling the heat of said solution, means for spraying same on the tooth of a patient, and means for preventing same entering the mouth of a patient, and means for draining same away substantially as described.

Fig. 2.

869,563. Handpiece for Dental Engines. James F. Hardy, New York, N. Y., assignor to Consolidated Dental Manufacturing Company, New York, N. Y., a corporation of New York. Filed November 24, 1906. Serial No. 344,945. 1. In a dental handpiece, the combination with a holder, of a spindle and its tool carrier constructed to be moved through the rear end of the holder and means arranged to be operated by the hand of the operator for locking and releasing the spindle to and from the holder.

Fig. 3.

900,380. Block-Signaling Device. William Fechner and Albert H. Fechner, Goliad, Texas. Filed July 23, 1907. Serial No. 385,107. 1. As an article of manufacture, an artificial tooth-crown having a post-receiving tapered cavity therein, and a tapered metallic shell located in said cavity and having on the inner surface of its smaller end one or more longitudinally extending grooves.

FIG 1

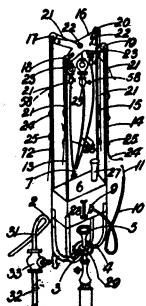


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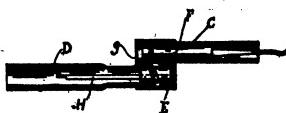


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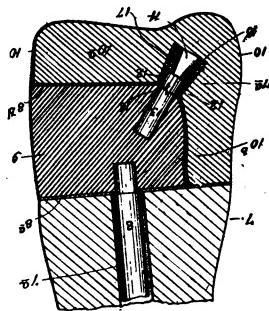


FIG 2

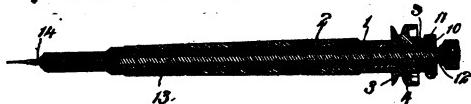


FIG 5



Fig. 4.

901,276. Dental Plugger. John C. Betts, Philadelphia, Pa. Filed April 18, 1907. Serial No. 368,839. 1. In a dental tool, a casing formed with two compartments separated by an apertured mid wall, the compartments having relatively opposite open ends, a cylindrical body disposed in one compartment, said body being formed with a cam groove,

a handle secured to said casing and to hold said body against longitudinal movement, said body carrying a spindle for attachment to an engine shaft, a tool holder disposed in the other compartment for longitudinal reciprocating movement and a pin projecting laterally from the inner end of said holder through the opening in the mid wall, said pin having its end engaged in the cam groove.

Fig. 5.

902,122. Tooth-Cleaner. Elizabeth E. Sulzer, Philadelphia, Pa. Filed May 18, 1907. Serial No. 374,493. 1. A tooth cleaner consisting of a single piece of wire so bent and twisted as to form a fork at one extremity, a twisted wire handle adjacent to the fork, loops on the end of the handle opposite to the fork and disposed in the same plane, an indented depression formed on the end of the handle by the divergence of the loops, a notch at the extremity of each tine of the fork terminating in narrow slits vertically disposed to the longitudinal axis of the wire and adapted to receive a band of elastic material, substantially as described.

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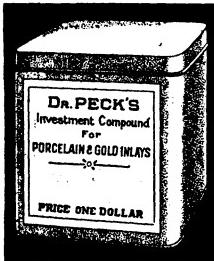


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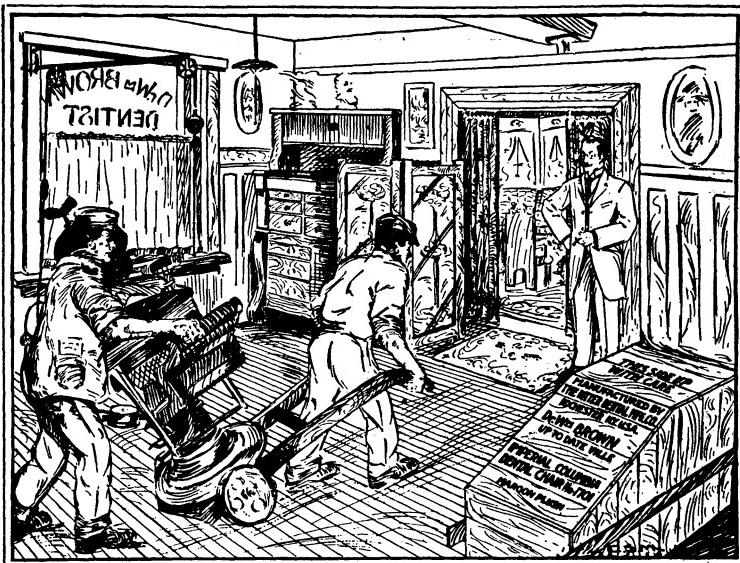
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The Columbia Chair

Recent advances in dental chair mechanics make such chairs as the Imperial Columbia a great blessing to the hard-working dentist.

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Your dealer can dispose of your old chair. You can pay the difference a little at a time if you prefer.

IMPERIAL COLUMBIA CHAIR

\$225.00 in standard finish

Other chairs at a less price but Imperial Columbias are the best

The Ritter Dental Mfg. Co.
ROCHESTER, N. Y.

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It is the only one made with an overflow like a washstand.

Make us prove it.

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If he would be successful must back up his craftsmanship with the most modern conveniences. For rapid and cleanly work a commodious dental cabinet is indispensable. Every instrument, every bit of material should be within instant reach. The patient in the chair wants the work done as quickly as possible. He does not want to wait for the dentist to hunt for a mislaid instrument. In one of our Modern Cabinets everything is at hand for immediate service.

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Two Rivers, Wisconsin

WE HAVE A LARGE STOCK OF NEY'S GOLDS



E have all karats of the plates and solders. Any of the golds required for prosthetic work including the discs and seamless shells can be found here—instantly available.

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When you want Ney's Golds, come to us. Let our salesmen supply you. We have them ready.

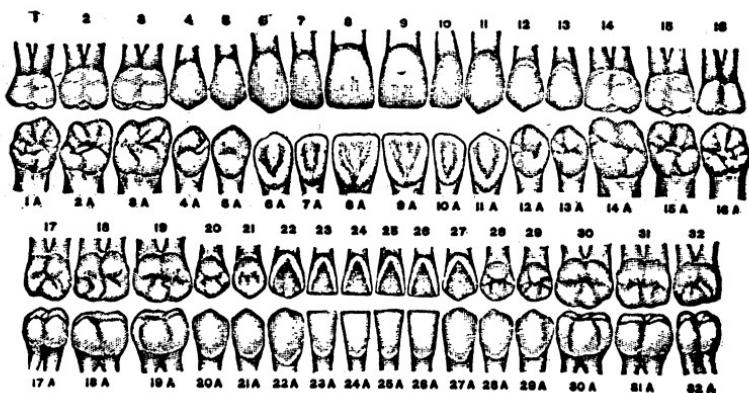
C. L. Frame Dental Supply Co.

Successors to Frink & Young Co.

Masonic Temple

Chicago, Illinois

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REMARKS

CUT OF TEETH ON ONE SIDE

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190.

DR.

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RULED FOR ACCOUNTS ON REVERSE SIDE

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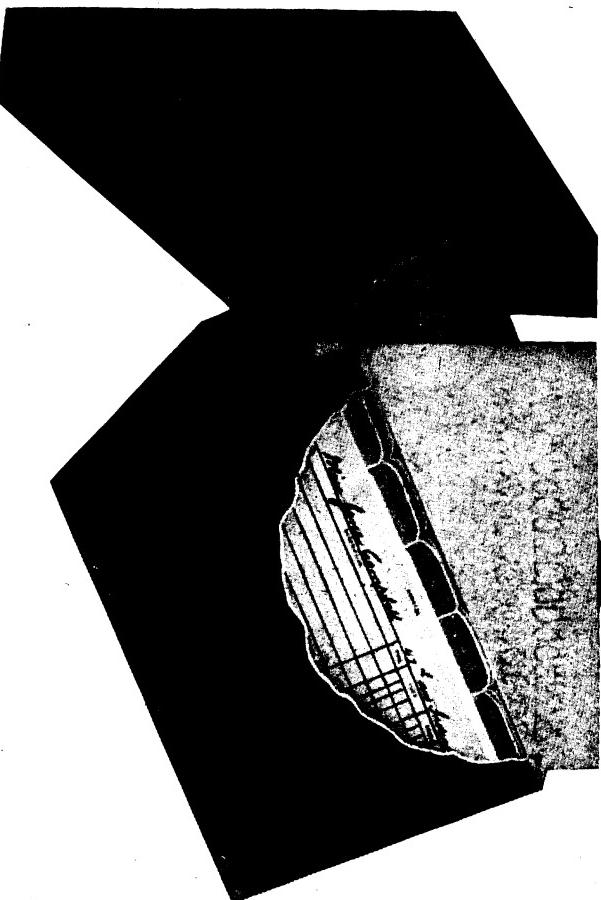
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FOR \$2.00 PREPAID

CARD SYSTEM No 2



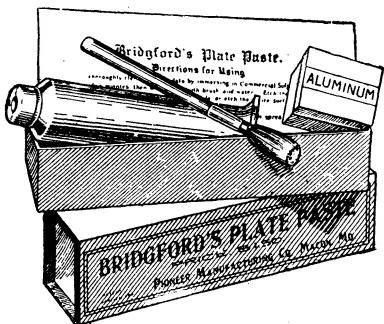
Contains 300 4x6 cards, cut of teeth on one side, ruled for accounts on the other. Two sets of indexes, different colors, and 10 cash cards. In heavy black cloth covered case. For cuts of cards and prices of extra cards see previous page. Size of case $6\frac{1}{2} \times 9\frac{1}{2}$ and $4\frac{1}{4}$ deep.

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MASONIC TEMPLE, CHICAGO

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MAKES MISFIT PLATES FIT

HOW?

BY applying the paste on back of plate and pressing to place you will have as sharp an impression as any taken with the usual impression materials. When vulcanized and finished, it has a beautiful Aluminum Surface. Flask with one pour—that's all, then you'll hear no more—"Doctor, my plate drops down when I talk or eat.

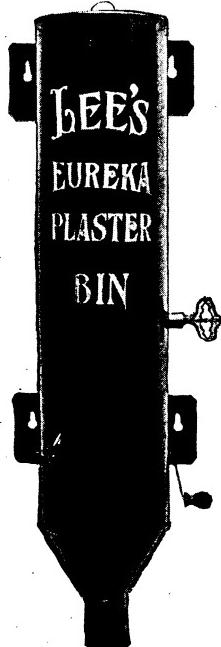
Enough for 6 to 10 Plates Price, \$1.50 per tube Full Directions With Each Package

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ELLIOTT & COMPANY, Edinburgh, Scotland
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The Correct Thing for Plaster

No Dentist likes to handle plaster. They all say it is a nuisance. This is because they have not used

LEE'S EUREKA PLASTER BIN

It saves the mess.

It saves time.

It saves your hands.

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No Lumps--No Dirt. Not Too Much--Just Enough

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Dr. P. T. Dashwood of Atlanta says, "Lee's Plaster Bin is 100% better than any I have seen."

6 qt. Japanned, \$2.25. Weight 6 pounds.
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Order from your dealer, or DR. J. I. LEE, Demopolis, Ala.

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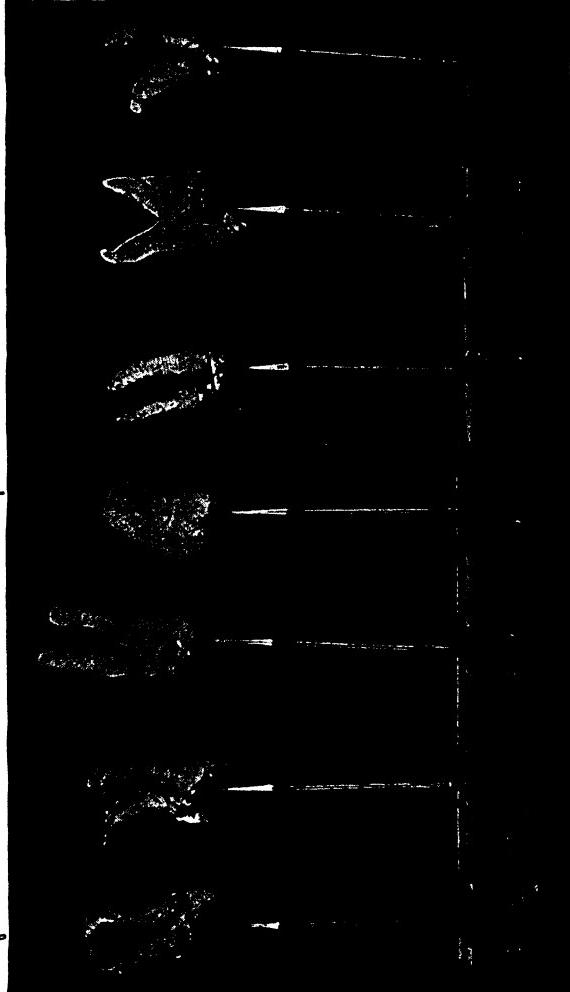
THE ONLY LOCAL ANTISEPTIC ANESTHETIC FOR PAINLESS
EXTRACTION OF TEETH, AND ALL MINOR SURGICAL OPERATIONS

Upon receipt of six cents will forward you samples and literature.

Impacted Wisdom extracted for Mrs. Dr. Heather, of Chicago

Note how I had to cut away the Menio Occlusal aspect.

Note the Ice Tong shape



Extracted for Dr. Q. W. Green, M. D., by Dr. Lelan Otis Green,
Chicago. Acetoria being employed.

Impacted Wisdom.

If you cannot procure Acetoria from your dental depot, order direct from

DR. L. O. GREEN, HEYWORTH BLDG.
CHICAGO, ILL.

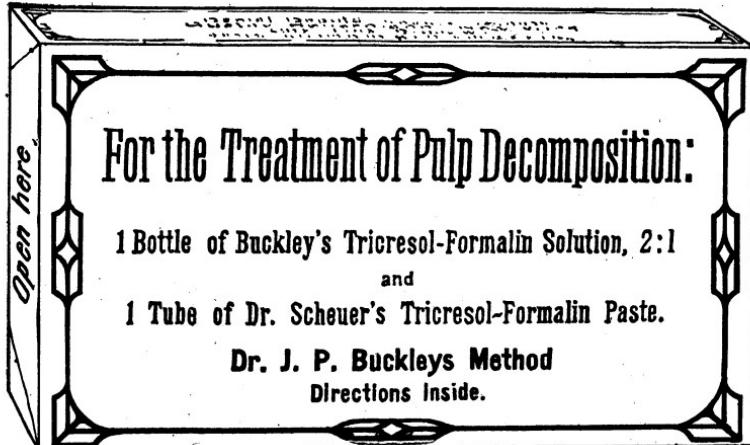
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For the Treatment of Pulp Decomposition

(Dr. J. P. Buckley's Method)

Dr. Arthur Scheuer's Tricresol Formalin Paste

is used with universal success by the Dental Profession



READY FOR IMMEDIATE USE (no mixing required)

Imported on account of its phenomenal success on the European continent.

Numerous testimonials from European and American dentists.

Particularly beneficial for treatment in the following cases:

No. 1. GANGRENE IN TEETH NOT SHOWING INFLAMMATION

No. 2. SEVERE PERIOSTITIS

No. 3. GANGRENE IN TEETH WITH FISTULA

How to proceed in each case, directions in each package will tell you

PRICE PER BOX, COMPLETE, \$1.50

This box contains

1 Tube Dr. Scheuer's Tricresol Formalin Paste

1 Bottle Dr. Buckley's Tricresol Formalin Solution

Paste and Solution are furnished also separate as follows:

Dr. Scheuer's Tricresol Formalin Paste . . . \$1.25

Dr. Buckley's Tricresol Formalin Solution25

Dr. Scheuer's Artificial Dentine Provisorium

An excellent and inexpensive preparation for covering healthy exposed pulps. For hermetically sealing Tricresol Formalin Solution in root canals it is unsurpassed.

Price per Box, Containing Powder and Liquid, \$1.00

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C. L. FRAME DENTAL SUPPLY CO.

Successors to FRINK & YOUNG, 606-607 Masonic Temple, CHICAGO

INLAY WAX

You prefer it black? Very well, you can have either black or pink.

It doesn't matter whether you use a High Priced Machine (which is best) or a Ring, a piece of Asbestos and a board; or any other of the many devices for the purpose, the Measure of Your Success will be largely determined by the Wax and the Investing Compound used. The Frink & Young Co.'s Inlay Wax Specially Prepared for the work, is Filtered and Refined, Guaranteed to be Free from any substance detrimental to the making of a Perfect Pattern for a Cast Gold Inlay, is made in Stick Form for convenience and Each Stick carefully enclosed in foil to insure perfect cleanliness.

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Successors to
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CHICAGO, ILL., U. S. A.

Price 50c the Box

WONDERFUL ADVANCE IN PROSTHETIC DENTISTRY.

has been made in recent years, and

Gilbert's Metallic Lining

has played no small part, because it not only improves the appearance and fit of a denture, but renders it hygienic and easy to clean. So-called rubber sore mouth is prevented, the patient will be pleased, and you receive more for your work, with only a small outlay.

This lining is pure aluminum in solution, which is painted on the rubber before vulcanizing—after which it comes out finished and beautiful.

It does not peel off or dissolve.
Price (enough for ten dentures) \$1.00

IF YOU DO NOT USE METALLIC LINING

you surely want your plates smooth and polished on the palatal surface. You can have them so by using

Gilbert's Model Dressing

To bring out the lustre this should always be used with Metallic Lining.

Price, per package 50c

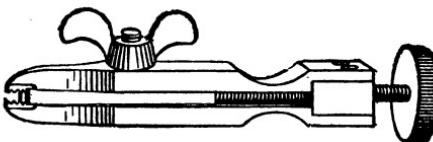
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1627 Columbia Ave. S. Philadelphia, Pa.

The CROWN "Pin Puller"

Two-Thirds
Actual
Size



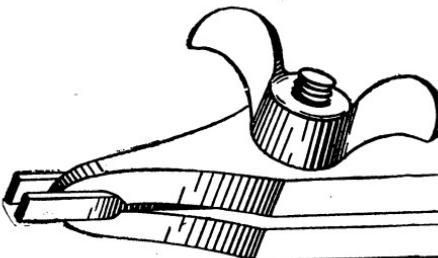
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Price \$3.00

A Crown Pin Removing Vise — A Great Time and Temper Saver

With this instrument you can remove the pin from any root in a few seconds without pain to the patient or injury to the root. The Crown Pin Removing Vise is a superior instrument designed, and made to remove the pin, post, or anchor, which is left cemented in natural root, after the porcelain crown or fillings have been fractured or otherwise removed, and the ease and rapidity with which it will do the work will pay for the instrument the first time it is used.

Enlarged
Section
showing
position
of Posts
after use



For Sale by All
Dental Depots,
or sent direct
by mail upon
receipt of price

Manufactured by

Dr. Geo. T. Carpenter

Buchanan, Mich.



Acolite

AN IDEAL CASTING METAL

Pure, white, tasteless, takes a high polish, never discolors, casts sharp, has toughness, density and edge strength.

Casts directly on any porcelain teeth.

Especially adapted for root restoration, crown and bridge work. A substitute in all places where gold casting is indicated.

Casts with any apparatus used for gold

Prepared only by **ACOLITE MANFG. CO.**, 72 W. Lake Street, Chicago
(INCORPORATED)

For Sale by **C. L. FRAME DENTAL SUPPLY CO.** AND OTHER
SUPPLY HOUSES
Successors to **FRINK & YOUNG**



As The Hero Of Longfellow's Poem Did

so do we plant our colors beyond the reach
of all competitors in so far as concerns the
quality of Nerve Broaches.

Our **Excelso Improved Nerve Broaches** are
the result of years of experimenting with all
makes of wire in both United States and
Europe. The difficulty was to obtain a
broach rigid enough to allow forcing to
apex of tortuous canal without being
brittle and tough enough to stand clean-
ing of canal without stripping or bend-
ing the barbs. Our Excelso Broaches
are barbed on all sides and are cut in
form of screw. They are also
barbed to extreme end of point
so that when forced
to apex and rotated
the end barb will
excise pulp at that
point.

OUR OFFER

Send 50 cents for a package of our Improved Excelso Nerve
Broaches and if they are not better than any you ever used
we will return the money and you may keep the broaches.

C. L. FRAME DENTAL SUPPLY CO.

Successors to **FRINK & YOUNG CO.**, Masonic Temple, CHICAGO

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confer a favor upon both the Advertiser and the Journal.

College of Dentistry

University of Illinois

DENTAL DEPARTMENT OF STATE UNIVERSITY



EQUIPMENT of entire University, \$3,320,000.00. Dental and Medical Departments—\$625,000.00.

BUILDINGS. The University has twenty-four large structures. The Dental School is a six-story edifice, and covers one-fourth block.

TEACHERS. The University proper has 387 instructors. The Dental Department has 43 instructors and associates.

ATTENDANCE. From 758 students in 1891 the U. of I. now numbers upward of 3,500. Attendance has tripled in two years, making the University fourth in rank of State Universities. **The Dental and Medical Departments together have 1,000 students**

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C O L L E G E O F D E N T I S T R Y

University of Illinois.

ATTENDANCE. From 758 students in 1891 the U. of I. now numbers upwards of 3,500. Attendance has tripled in two years, making the university fourth in rank of State Universities. The Dental and Medical Dep'ts together have 1,000 students.

SUPPORT. The great and wealthy State of Illinois liberally provides for its maintenance, the State Legislature at this session granting \$734,000.00. Besides the government at Washington annually sends an appropriation of \$25,000.00.

EXPENSES. The operating expenses of the entire University were a trifle less than \$400,000.00; the Dental and Medical Budget more than \$100,000.00.

PROFESSORS. In the Dental School : Cigrand, Cook, MacDowell, Gallie, Eckley, Dittmar, Buckley, Jones, Powell, Roach, King, Steele, Burkholder, Zappfe, Carpenter, Patton, Abbott, McCauley Brothers and Hewett.

COMFORT. The Dental and Medical buildings are both modern—built for college purposes—possessing electric elevators, and all appliances required to make the laboratories, class-rooms and infirmary complete.

LOCATION. The Dental and Medical Departments cover a block—Harrison, Honore, Congress and Ogden Ave. bounding the properties. This point is the centre of the greatest Medical and Dental community on earth, yielding unsurpassed clinical advantages.

RECOGNITION. The Dental Dep't has membership in National Dental Faculties Association.

POLICY. Theory and practice receive equal consideration. When at the college call on Dr. C. E. Jones, Sec'y.

For further particulars address the Dean,

GEO. W. COOK, B.S., D.D.S.
Cor. Harrison and Honore Sts., Chicago, Ill.

Has Reached
the Summit
of Quality



German Silicat Cement

Unites all the qualities of the Best Cement and is free from the defects which have made other cements a bad investment. Crown, bridge and inlay work are some of the features for which it is pre-eminently adapted. Silicat Cement represents the highest development and essential requisites to cement character, and this raises it to the pinnacle of Cement Success. If it disappoints you in its use or does not return its value, we'll return the money. Worth \$3.00, costs you ONE.

Free sample for the asking.

All colors, \$1.00 per box

**GOLDSMITH BROTHERS SMELTING AND
REFINING COMPANY**

HEYWORTH BUILDING

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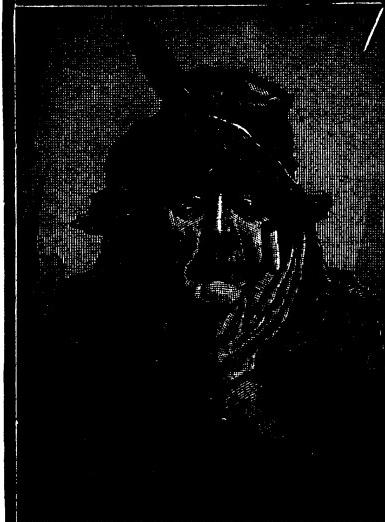
CHICAGO, ILLINOIS



ANTIKAMNIA & CODEINE TABLETS



FOR PAIN ABOUT THE TEETH



When to Use Them

FIRST

To ease the nagging and shooting pains while operating; to quiet the nerves, and prevent the headaches and nausea which frequently follow operations, administer one Antikamnia & Codeine Tablet every hour

— GIVE ONE BEFORE BEGINNING OPERATION —

SECOND

One Antikamnia & Codeine Tablet given before and another one after extracting a tooth, will stop pain and allay irritability

THIRD

When a painful cavity exists, or a nerve or root is exposed, administer internally one or two Antikamnia & Codeine Tablets and fill the cavity with the powdered tablet, or apply it freely about the gums

FOURTH

For toothache, earache and facial neuralgia, administer one Antikamnia & Codeine Tablet every two hours
FOR SAMPLES AND LITERATURE, ADDRESS

The Antikamnia Chemical Company • St. Louis, Mo., U.S.A.

PATENTS procured promptly and
properly in all countries.
Also trade marks and copyrights.

DAVIS & DAVIS

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opposite Patent Office, Washington, D. C.

NEW YORK OFFICE:

220 Broadway

ALVATUNDER

FOR PAINLESS EXTRACTION

"Sold 'round the world" by all good dealers at the following prices:

1 Ounce, - - -	75 cts.	2 Ounces, - - -	\$1.50
10 Ounces, - - -		55.00	

Manufactured only by

THE HISEY DENTAL MANUFACTURING CO.
ST. LOUIS, MO., U. S. A.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

BARGAINS

CHAIRS.

1 Columbia Chair, divided headrest.....	\$100.00
1 Morrison, newly upholstered.....	35.00
1 Gould Chair, newly reupholstered.....	35.00
1 Gould Chair	30.00
1 4-Leg Gould Chair, practically new, good condition.....	25.00
1 Portable Chair.....	6.00
1 Four-Leg Gould Chair, Long Back, newly reupholstered.....	25.00
1 Four-Leg Gould Chair, long back.....	20.00
1 Harvard Mech. Chair.....	75.00
1 S. S. W. Pedal Lever Chair	20.00
1 McConnel Portable Chair.....	9.00

ELECTRIC FURNACES.

1 Bosworth, new .. .	20.00
1 Hoskins Furnace	20.00

ELECTRIC ENGINES.

1 Motor and Rheostat	10.00
1 Motor Lathe, 3 chucks, 110 volts, pulley chuck.....	19.25
2 110-Volt Motors, each.....	6.00

ENGINES.

1 Clark Engine, Good Condition.....	22.00
1 S. S. W. Engine, Good Condition.....	22.00

VULCANIZERS.

1 Hood & Reynolds, new \$18.....	12.00
1 Lewis 2-Case, new \$18.00.....	12.00
1 Whitusy	6.00
1 Davis 3-Case.....	13.00

FOUNTAIN SPITTOONS.

1 Clark Double Bowl (metal).....	\$30.00
1 Clark Double Bowl (glass), new \$65.00.....	45.00
2 Weber, each	22.50

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

BARGAINS—Continued.**MISCELLANEOUS.**

1 No. 28 R. & R. Cabinet, new \$40.00.....	\$25.00
Eucaine Tablets, former price 50c, now.....	.25
1 Improved Donaldson Press with 2 Flasks.....	2.00
1 Century Swager, new, \$35.00, never used.....	25.00
1 Hurd Outfit, complete with two cylinders and 200 gals. gas.....	22.00
Large number of Forceps, all makes.....	1.50
1 Sharp Furnace	10.00
1 U. S. Obtunding Syringe, new, \$8.00	4.00
1 Weaver Obtunder, new, \$12.00; A1 condition.....	6.00
1 Turner Furnace, No. 1, new, \$18.00.....	9.00
1 International Gold Inlay Machine, A1 condition.....	10.00
1 Turner Furnace	9.00
1 Box Consolidated Body, new \$10.00.....	6.00
1 Brophy Porcelain Furnace, with Air Tank.....	14.00
1 Box Jenkins Prosthetic Porcelain, less one color, \$37.00 new.....	25.90
1 Olivian Swager, new \$30.....	20.00
1 Rubber Form Crown Outfit, new \$20.....	12.00
1 No. 45 Buffalo Gasoline Generator, with 6G blowpipe, new \$10.50	6.50
1 Bosworth Mallet Case and 8 points.....	8.00
1 S. S. W. No. 12 Engine Mallet for Doriot Engine, new \$12.00....	7.00
1 Hollingsworth System, new \$16.18.....	9.00
1 Abbott Mallet, S. L. W., new \$8.00.....	4.50
1 Lyons Swager, complete	18.00
1 Plate Punch, new \$2.00.....	1.25
Carborundum Trimmers, 50c, now.....	.25
3 Sibley Automatic D. E. Mallets, \$4.50 each.....	3.50

**Lot of small instruments,
Excavators, Burnishers, Scalers, etc., half price.**

C. L. Frame Dental Supply Co.

SUCCESSIONS TO
FRINK & YOUNG

PERMANEO ALLOY



PRICE

Per oz.

\$1.50

5 ozs.

\$6.50

Has

$\frac{1}{20000}$

of an inch
Expansion

Is malleable and can be burnished over marginal edges. Will keep its color in any mouth in which gold will remain bright. Has very high crushing resistance.

Modified from a formula in use for thirty years. A perfect chemical compound made to conform to recent scientific investigations. As nearly perfect as chemically pure metals, skillful manipulations and scientific experimentation can produce.

C. L. FRAME DENTAL SUPPLY CO.

Successors to
FRINK & YOUNG

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SAVE GOLD

and make better inlays by hollowing them out with
ROACH'S SUCTION WAX CARVER



SAVES
MANY
TIMES
ITS
WEIGHT
IN GOLD

Just mount wax inlay on sprue wire, heat bulb, not too hot, apply point of carver to wax and as it melts around the point draw it back into the reservoir containing absorbent cotton with suction established by the mouth-piece or saliva ejector.

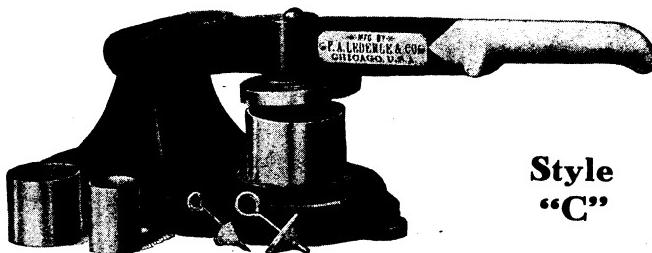
Wax can be carved thin as paper without injury to margins.

Order one now—try it on your next big inlay, and if not satisfied you may have your money back.

Invention of Dr. F. E. Roach, Chicago.

For Sale by all dealers—Price \$4.00

\$5.00 CASTING MACHINE



Style
“C”

SIMPLE—CHEAP—DURABLE

No failures if flask is properly heated and gold is dancing hot.
Can cast against porcelain, or cast gold base to “Logan”
Crown, also bridges with facings in one piece.

Imported asbestos pad — will outlast any other. Each ma-
chine furnished complete as shown in cut.

F. A. LEDERLE & CO.

Manufacturers of Dental Specialties and Metal Novelties

1206 Trade Building and 711 Elston Avenue, CHICAGO, ILL.

Chicago College of Dental Surgery

DENTAL DEPARTMENT VALPARAISO UNIVERSITY.
FOUNDED IN 1880 2420 GRADUATES

HAS CONTINUED UNDER THE MANAGEMENT OF ITS FOUNDERS SINCE ITS ORGANIZATION.

THE TWENTY-SIXTH ANNUAL COURSE OF INSTRUCTION WILL
BEGIN OCT. 7, 1907, ENDING ABOUT JUNE 1, 1908.

INSTRUCTION IS COMPLETE IN EVERY DETAIL.

THE CLINICAL MATERIAL IS ABUNDANT, WHILE THE COLLEGE BUILDING AND ITS
EQUIPMENT OFFER UNSURPASSED FACILITIES
TO THE DENTAL STUDENT.

FOR CATALOGUE ADDRESS

DR. TRUMAN W. BROPHY,
DEAN

770 W. HARRISON ST.

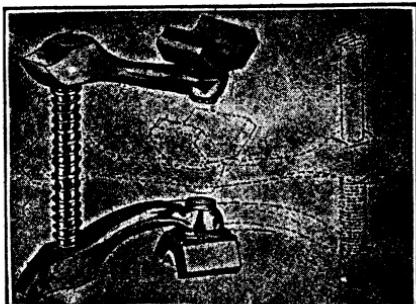
CHICAGO, ILL.

The Original Adams Mouth Prop

Swivels at top and bottom. Convenient to operate on either side of the mouth. Quickly and easily applied.

Price One Dollar.

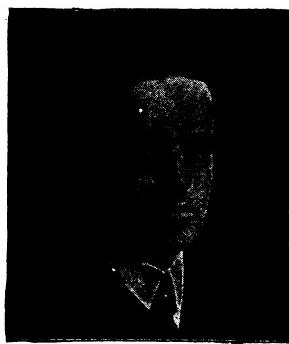
For sale by all dental dealers.



C. L. FRAME DENTAL SUPPLY CO.

Successors to FRINK & YOUNG
607-8-9 Masonic Temple, CHICAGO, ILL.

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C. N. REESE, D. D. S.



GEO. W. WIEDHOFT, D. D. S.

Doctor

Are You Aware—

That we are the leading dental laboratory firm of America?

That our product is recognized by discriminating dentists as the Standard of excellence?

That we enjoy a larger local patronage than all other Chicago laboratories combined?

There **MUST** be a Reason

Shall we send you Illustrated Catalogue
and Mailing Boxes?



Chicago Dental Laboratory Company

DRS. REESE & WIEDHOFT

65 Randolph Street

Chicago, Ill.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.



Up-To-Date D. D. S.

Realize that neatness in office dress is as essential as other qualifications.

Therefore to attain this address a postal request to D. D. S., Coat Department.

Overdier Mfg. Co.
No. 10 Fifth Ave., Chicago, Ill.

FOR CATALOGUE

NORTHWESTERN UNIVERSITY DENTAL SCHOOL

Offers exceptional advantages to young men and women for the study of dentistry. While great attention is paid to the teaching of technic and theory, practical instruction to develop operative skill and dexterity and quick diagnostic judgment is not overlooked.

The Faculty is composed of a large staff of experienced teachers with DR. G. V. BLACK as the dean.

The equipment and apparatus of the School are especially designed for the successful teaching of modern dentistry. Its large clinic rooms for operative and prosthetic dentistry are unequalled anywhere. The opportunities offered students for special preparation to enter independent practice are not exceeded by any other school.

Advanced students are permitted to remain in school under clinical instructors during the months intervening between the regular annual courses, the great clinics being open continuously the year round.

A successful course of three years leads to the degree of D. D. S.

The school year covers thirty-two weeks, of six days each, of actual teaching. The next annual session begins October 6, 1908.

A POST-GRADUATE COURSE will be given for PRACTITIONERS during the month of June of each year.

For further information, address

DR. C. R. E. KOCH, Secretary

NORTHWESTERN UNIVERSITY BLDG., :: CHICAGO

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

CARROLL'S DENTAL CLAMP and MATRIX COMBINED

Patented July 26, 1904.

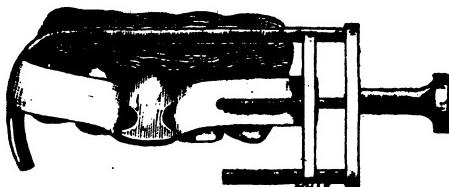


Fig. 1

ribbon may be brought to a tension sufficient to support all the pressure that is necessary in condensing a gold filling at the same time perfectly contouring the lingual and approximal surfaces of the gold. Fig. 1 shows front view of the clamp properly adjusted for a filling to be made from the labial surface. Fig. 2 shows a posterior view, when filling is to be inserted from the lingual surface.

This device, in the hands of an experienced dentist, saves time and labor, and saves the patient much pain; for when the metallic ribbon is brought to a tension it supports the tooth that is to be filled and unites the strength of three teeth in place of one, to resist the pressure and blows the mallet. In the hands of an unskilled operator, it enables him to make a good gold filling.

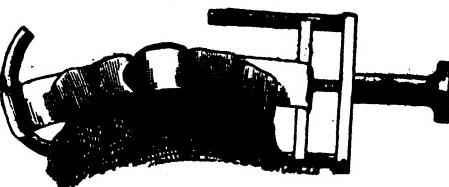


Fig. 2

Prices: \$2.50 with 6 Ribbons; Extra Ribbons 50c. per dozen



CARROLL'S RETAINERS FOR Artificial Teeth

Fig. 1 shows Retainer attached to the plate.

Fig. 2 shows Retainer before attachment.

Fig. 1

Fig. 2



(Patented September 17, 1895; in United States and Foreign Countries)

Retainers do what their name implies; they hold a lower plate firmly and steadily in position.

The muscles of the jaws and cheeks, in their contraction, exert a pressure on the expanded and vertically extending portions of the retainers. This pressure, which is exerted without conscious effort, is the force that holds the lower denture firmly in position on the alveolar ridge.

Retainers are made of Aluminum.

Prices: One Pair 75 Cents; Six Pairs \$4.00

SOLD BY ALL FIRST-CLASS DENTAL DEPOTS

JOHN T. NOLDE DENTAL MFG. CO.,

916 Olive Street

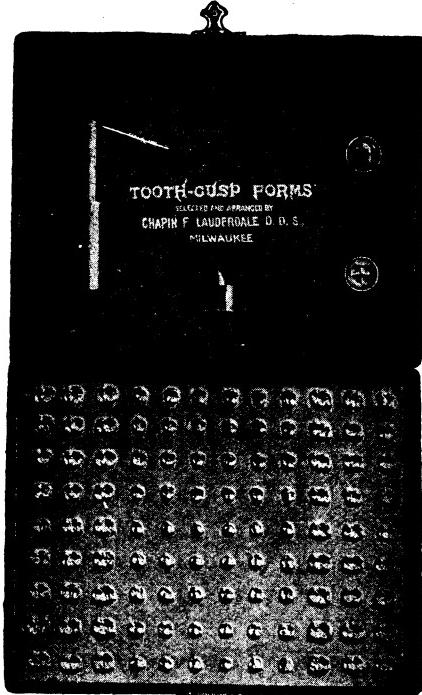
ST. LOUIS, U. S. A.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

The Lauderdale Crown System

Price

\$5.00



Patented May 12, 1903.

With this outfit you can alter the cusps to suit your case. Do away with metal counter-dies. Adjust backings perfectly. Accurately fit vulcanite dummies. Swage matrix for porcelain inlays. Construct shell crowns for anterior teeth. Construct metal dummy shells in one piece. Our booklet contains invaluable hints on this subject, sent on application.

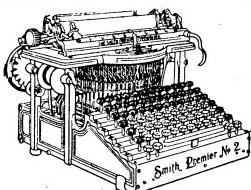
C. L. FRAME DENTAL SUPPLY CO., Sole Agents
Successors to **FRINK & YOUNG**

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

Indiana Dental College INDIANAPOLIS, INDIANA

The thirtieth annual session will begin October 6, 1908.
A College combining the experience of years with the
most modern teaching methods known.

For Catalogue and other Information, address the College
as above



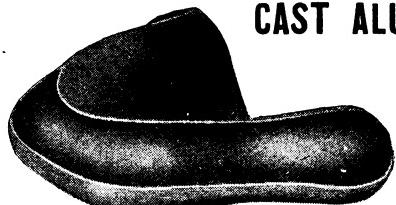
WIDE-WORLD DISTRIBUTION.

There is no mistaking the superiority of a typewriter that, in seventeen years has built up a market in every part of the civilized world. This international indorsement of

The Smith Premier Typewriter

proves our right to offer it to you as the world's best typewriter. Write us or any Smith Premier branch for a detailed description of its advantages.

Smith Premier Typewriter Co. 20 East Van Buren Street
CHICAGO, ILLINOIS



CAST ALUMINUM DENTAL PLATES

When you order from us mark on model distinctly the outline of plate wanted.

Furnish model same as for Vulcanite.

Unconditional guarantee given for purity of metal, perfect adaptation and sound, solid castings. Price \$4.00.

OSCAR BOECK, 1228 N. SAWYER AVENUE, CHICAGO

AD-LAC

Manufactured by METALLINE MANUFACTURING CO.

An Adhesive Substance for Mending BROKEN PLASTER CASTS.

Also used for varnishing cavities, preventing capillary attraction FOR VENEER INLAYS it is indispensable. Useful for mending broken china, crockery, etc. Superior to liquid celluloid, silex, oxyphosphate cement, etc., in any class of repairs.

C. L. FRAME DENTAL SUPPLY CO., (Exclusive Agents)

Successors to FRINK & YOUNG CO., CHICAGO, ILL.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

Aschers Artificial Enamel

This wonderful filling material needs no introduction to the profession, having been in continual use, with the greatest success for five years. All of the imitations have proven flat failures, and are taken off the market after a few months trial. Buy something you KNOW has stood in the mouth for five years. Ours is the only filling material sold under a money - back - guarantee. We have a free course of instructions.

Send your name and address today.

The Pinches Dental Mfg. Co.

1181 Broadway

MAIN OFFICE

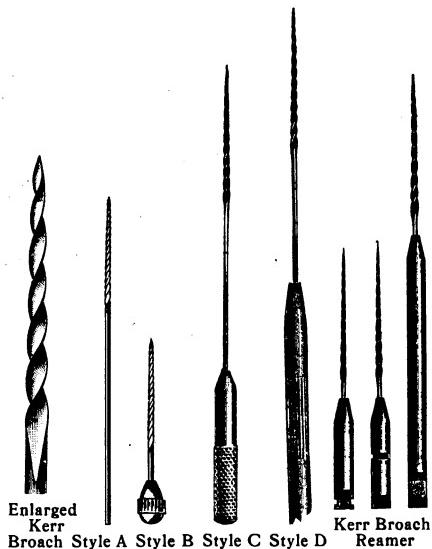
NEW YORK CITY

CHICAGO BRANCH
3035 South Park Avenue

ST. LOUIS BRANCH
716 Century Bldg.

All Reputable Dealers Carry and Recommend our
Enamel as the Best.

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Kerr Broaches

THE KERR BROACH

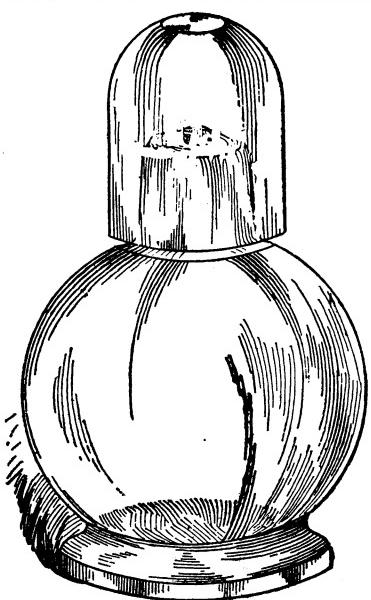
A tapered spiral with a sharp cutting edge, tough and flexible. The most efficient method for root canal treatment, and essential for all good canal work.

All styles put up half dozen in package, all one size or assorted.

PRICES

Style A	Per ½ dozen \$.75
" B.	" " " 1.00
" C.	" " " 1.00
" D.	" " " 1.50
Kerr Broach Reamers... " "	1.50

Detroit Dental Mfg. Co., DETROIT,
MICH., U. S. A.



PREPARATION BOTTLE

With Ground Glass Cork
as per illustration

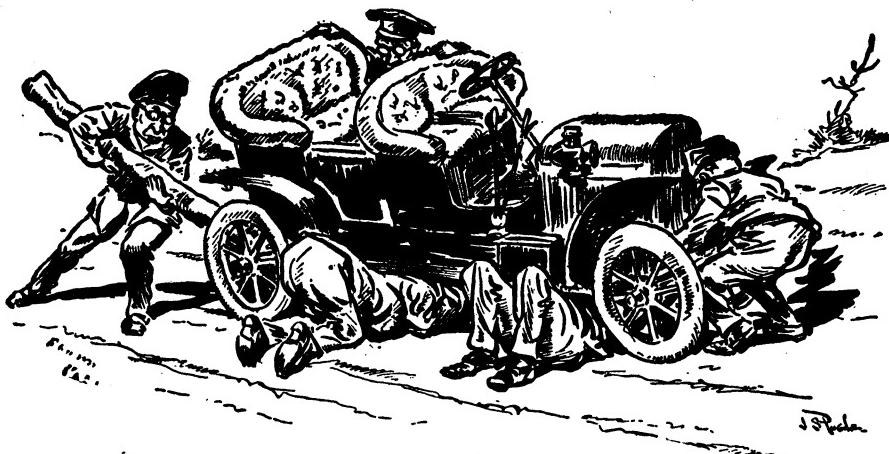
Cut is actual size and mouth is
¾-inch wide. Made by Parke,
Davis & Co. Bought them
cheap; so can you.

75 cents per dozen
50 " " half "

C. L. Frame Dental Supply Co.

Successors to
Frink & Young Co.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.



REPAIRS

We know that repair work can be done in a satisfactory manner.

Yes, we know you have tried it before and found it did not pay.

No doubt you know of a patient who patronized a certain Dentist and paid good money for work which was worse than worthless. Is that a good reason why that patient should never again go to a dentist?

Send your repairs to us. The work will be right and at the right price, too.

PRICES:

BURS —Excavating, recut and stoned	per doz.	\$.50
" " " " "6 doz. lots	.45
" " " " "12 doz. lots	.40
" Plug finishing "	per doz.	1.00
" Larger sizes "	"	1.20
" Plate Burs "	"	1.20
" Lathe " " "	each	.40
PLUGGERS —Reserrated.....	per doz.	1.50
" " " and reshaped	"	2.50
EXCAVATORS —Common, repointed.....	"	.75
" Spoon and special pattern, repointed.....	"	1.20
CHISELS and SCALERS —Repointed and sharpened.....	each	.20
FOIL CARRIERS —Repointed and sharpened.....	"	.30
LANCES —Ground.....	"	.20
" " and repaired.....	"	.30
ROOT FACES —Sharpened	"	.10
REAMERS —Sharpened	"	.10

We Have All the Parts for No. 7 and Other Hand Pieces.
C. L. FRAME DENTAL SUPPLY CO., Successors to FRINK & YOUNG Masonic Temple, Chicago

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Pulps Capped Successfully

CARBOL EUGENOL CEMENT

has been saving exposed and almost exposed pulps for over ten years. Its use by 2,000 Dentists in the United States, with complete success. Carbol Eugenol Cement will not mummify the pulp, restores health and vigor. An imitation of natural dentine, slightly porous, sets not too hard, is a mild, soothing stimulant, reduces an inflamed pulp to normal condition almost immediately, can be placed over the pulp without the use of rubber dam and will set under the saliva. A perfect germicide, will keep in any climate and never lose its efficacy.

AS A ROOT FILLING

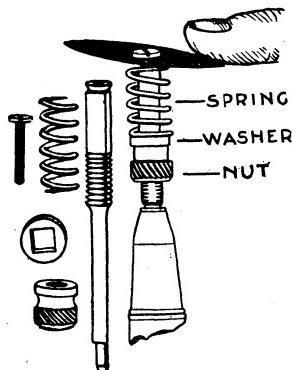
It has no equal, mix thin, pump into canals and force gutta percha canal-points through it. The canals will always remain aseptic, even when coming in contact with the fluids of the mouth. If small particles of pulp are left in canals, CARBOL EUGENOL will preserve them.

IN PORCELAIN INLAY WORK

a little Carbol Eugenol Cement placed in the cavity for half hour before setting inlay, seals the tubules, reduces the sensitiveness and prevents the Oxyphosphate having any effect on the pulp. Guaranteed to be as represented or money back.
PRICE, \$1.00. Ask your dealer for it or send direct to

J. A. WILLIAMS, D. D. S.
Manufacturer

Fort Wayne, - - - - Indiana.



THE LET-GO MANDREL

In nature, bone has cartilage, to lessen jars. Cars have springs, and Autos shock absorbers.

This Mandrel accomplishes this. It saves breaking disks, and the strain on the nervous system of the dentist. Last, it avoids the patient getting a mouth full of blood. Separating teeth for caps is a bugbear. Try this and if you are willing to part with it, your money back by return mail. **By mail.**

75 Cents Each.

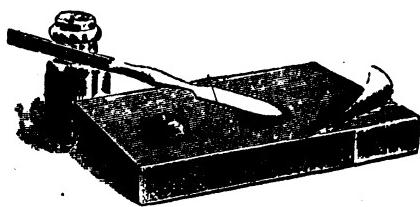
Will send one sample for 20 cents in stamps, just to try.

SPOONER'S CEMENT PAD

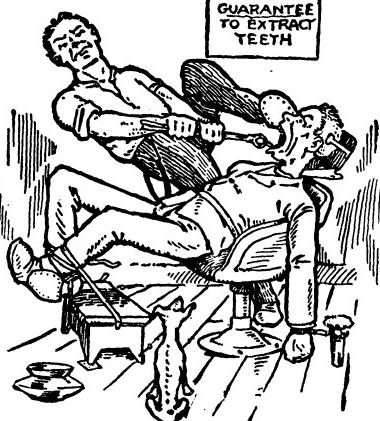
Saves trouble of scraping off a glass or porcelain slab. Is always clean. Can be used for any kind of mixing. Great for Ascher's porcelain. If you want to try it, send 10 cents in stamps, and then buy the next at the depot or tell your neighbor so he can.

Only One by Mail.

SPOONER DENTAL CO. 1239 Bedford Ave.
Brooklyn, N.Y.



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ODONTOLINE

THE ANTISEPTIC
ANESTHETIC

WHAT THEY SAY

I get better results from using "Odontoline" than any local anesthetic I have ever used.

DR. M. C. COOPER,
Dallas, Texas

I have been using "Odontoline" for one year, and have never used a local anesthetic that compares with it.

DR. R. N. PORTER,
Matone, N. Y.

1 OZ. \$.50. 5 OZ. \$2.00

**LOUISVILLE DENTAL LABORATORY
& MANUFACTURING COMPANY**
T. M. CRUTCHER, D. D. S. M.
LOUISVILLE, KY.

We will send you a trial ounce for 25c

Investing Compound for Cast Gold Inlay

The requisite qualities of an Investing Compound for Cast Gold Inlays are:

A Finely Ground, High Grade Gypsum; an Even Grained Silex equally fine; a proper proportion of these Ingredients; and a perfect incorporation each with the other.

THESE POINTS are all carefully observed in the manufacture of the C. L. Frame Dental Supply Co.'s Investing Compound, and by its use a Perfect Mold is formed for the gold inlay

Price, 1 lb. box 25 cts. If by mail, add postage. 5 lbs. for \$1.00

FOR SALE BY

C. L. Frame Dental Supply Co.

SUCCESSORS TO FRINK & YOUNG CO.

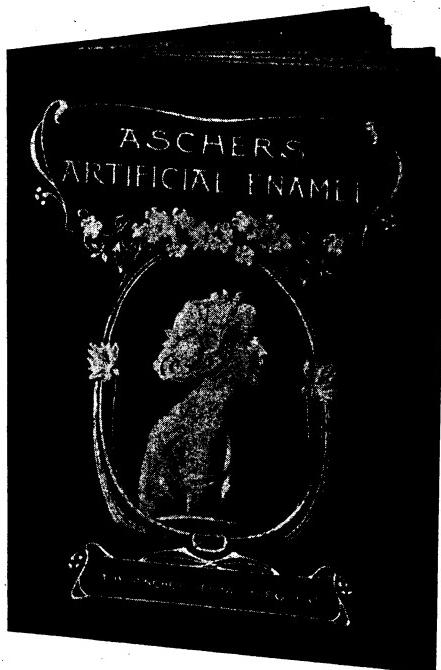
Chicago, Ill.

U. S. A.

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Free Book on Cements

SEND A POSTAL



FOR IT TODAY

The handsomest and most instructive book ever issued on the subject. Contains eighty pages of interesting and scientific articles beautifully illustrated. Write name and address plainly on a postal.

The Pinches Dental Mfg. Co.
1181 Broadway, New York

TRIOLIN

IS a *permanent, speedy and sure cure* for all forms of abscessed teeth.

¶ The most stubborn cases yield promptly to *Triolin*.

¶ *One or two treatments* will, as a rule, remove the cause of an abscessed tooth.

¶ Triolin destroys and neutralizes all poisonous gases arising from decayed animal or vegetable matter—being a thorough antiseptic and deodorizer.

¶ Triolin as a root filling is unequaled as its ease of manipulation, its penetrating and antiseptic qualities, form the ideal qualifications in the treatment of root canals.

¶ Triolin will also be found to fulfill all the qualities of an A-1 mummifier, turning the parts of the pulp left in canals into an antiseptic substance almost as hard as dentine.

Trade
Supplied

PRICE \$1.00 PER PACKAGE

Trade
Supplied

If your dealer does not keep this, send to

J. A. WILLIAMS, D. D. S., Fort Wayne, Ind.

Not a Single Failure Reported

Every User that Writes Tells of Success

Thousands of boxes of Co-Arda have been sold under an absolute guarantee that Co-Arda will do perfect work as a combination abscess cure and root-canal filling---if used as directed---so far not a single failure has been reported,

CO-ARDA

CO-ARDA is the only successful COMBINATION abscess cure and root-canal filling on the market. Try CO-ARDA and be convinced of its time-saving, worry-saving and money-saving virtues. CO-ARDA saves hours of treatment on abscessed teeth, and it is **positive**. It saves from twenty to twenty-five minutes on every root-filling, and it is **permanent**. It works its way by capillary attraction to the end of upper molars and difficult root canals.

Will You Try It Free?

CO-ARDA is sold by all dealers---\$1 a box.

It is too valuable a preparation to be given away indiscriminately, but if you will give it a fair trial, we shall be glad, on receipt of a postal, or the attached coupon, to send a generous sample. Send for the sample today and see what you have been missing.

CO-ARDA CO., SCRANTON, PA.
Please send me free sample of CO-ARDA
and literature.

CUT OUT-MAIL TODAY-DON'T DELAY

D:.....
Street.....
City.....
State.....
Zip.....

The
CO-ARDA COMPANY

SCRANTON, PA.

Peritundo

Renders the Entire Tooth and Surrounding
Tissues Immune to Pain

YOU CAN EXCAVATE
YOU CAN REMOVE A NERVE
YOU CAN EXTRACT
YOU CAN GRIND

The Tooth on which Peritundo has been
used knows it not.

PERITUNDO CONTAINS NO COCAINE

Price per Package, \$1.50

Order from your Dealer

Distributors

The Jas. W. Edwards Co.
San Francisco, Cal.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will
confer a favor upon both the Advertiser and the Journal.

To the Dental Profession

DEAR DOCTOR,

Did you ever work an hour to remove an Iridio Platinum pin from the root of a tooth, and then possibly perforate the side before you got it out?

The Little Giant Post Puller

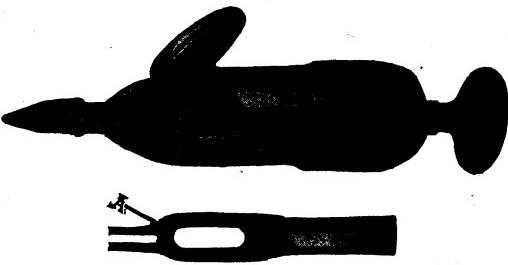
Takes it out in a scientific way in less time than it takes to explain how and leaves the root unharmed.

It is the only crown pin removing vice in which the slotted post which bears on the root end is braced with a bridge (see "A" in cut). The bars, or slotted post, cannot spread, therefore there can be no strain tending to split the root.

Full directions with each instrument.

For sale at all dental depots, or by

Price \$3.00.



2-3 actual size

F. H. SKINNER, D. D. S.

72 E. Madison Street

CHICAGO, ILLINOIS

1 Pound, 75c

1-2 " 38c

TRY IT

MANUFACTURED BY

THINK & YOUNG
CHICAGO

1 POUND

BEST
ON
EARTH

For Sale by C. L. Frame Dental Supply Co.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

Nerve Qui-e-tus is the new devitalizer and obtunder of dentine.

It is safe, sure, and convenient and painless in its effect. It renders the tooth non-sensitive, so that the operation of dressing out the cavity and filling the tooth is accomplished at one sitting, while the operator and patient laugh and talk about other things.

Doctor, throw away your preparations of arsenic. I have not devitalized a tooth with so-called Nerve Paste (which is true arsenic) during the last fifteen years. I have used N. Q. in over 5,000 teeth and the less than a dozen teeth I have lost in that number has been due to my work, and certainly not to the method.

You won't need your nerve extractors. You will find use for them only in putrescent canals. No canal will become putrescent where my method is used.

But two sittings are required. One to apply the devitalizer No. 1, and the next, four days later (the time may safely be deferred to even a month if the preparation is well sealed in), remove the application and fill. When you remove the devitalizer, fill the tooth at the same sitting. You simply use a large burr, the size to be governed by the size of the tooth operated on. Let the burr be sharp and round. Dress out the pulp chamber. If the burr is sharp it will shave off the nerve and not drag it or have a tendency to drag it out of the canal. This would cause pain, too. Do not remove the nerve from the roots. By this method they make a perfect and everlasting root filling.

Nerve Qui-e-tus No. 2 serves an important part in the treatment and lasting results, although it is apparently a simple liquid, and is simple to use. But without its use you would sometimes fail.

The whole operation of filling by this method requires usually not over a half hour, where amalgam filling is used. No tooth will ever abscess or even cause swelling. Neither will any discoloration ever take place.

And, moreover, No. 1 is the best and safest dentine obtunder ever used. You can apply it to a sensitive tooth, sealing it in from 6 to 8 hours or even longer if much dentine intervenes, and on removal of the obtunder you can drill the tooth without causing any pain, and no after trouble will ensue. (Read this again.)

Hundreds of dentists are using it exclusively, and the opinion of Dr. D. A. Lane, Manor, Texas, after using N. Q. is the opinion of all. Here is what he writes:

"Send me a \$5.00 package at once. I am entirely out and it makes me want to go fishing until I get some more."

Enough for forty or fifty cases of both 1 and 2 for \$1.00.

If your local dealer has not got it order of **C. L. FRAME DENTAL SUPPLY CO., Successors to FRINK & YOUNG, Chicago, Ill., or of DR. MILES O. PERKINS, of Beaumont, Texas,** who is the inventor and exclusive manufacturer.

P. S. Doctor, be independent. Don't do without the excellent medicine which will save you labor and money. Save your patients' teeth and save them pain, and insure their gratitude and friendship. That you do not know its composition should not deter you. That is an old foggy and foolish notion. I assure you it is not as bad as arsenic.

MILES O. PERKINS.

Dr. J. M. Cain, San Antonio, Texas, after using N. Q. about eight years, writes: "I have never met you but hope some day you will be given due credit for the introduction of such a valuable aid to the dentist."

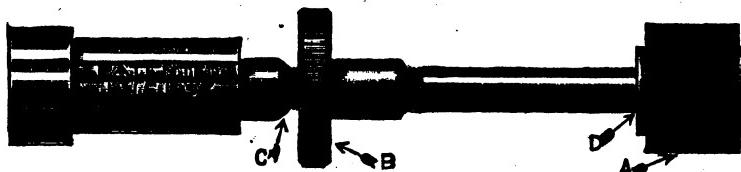
Ideal Emery Cloth Arbor,

INVENTION OF FLAVEL A. RUDOLPH.

Patented January 5th, 1897.

An Improvement on Files and Scrapers

IN FINISHING VULCANITE PLATES.



THIS IS HOW YOU OPERATE IT.—

You slip an Emery Cloth Band over the Rubber Head "A" then turn the nut "B" to the right against the Conical Collar "C" thus forcing the Sleeve and Clamp-Section "D" against the Rubber Head and expanding it so that it holds the Emery Cloth Band firmly.

THIS IS WHAT IT WILL DO.—

It will dress down a Vulcanite Plate quicker and more perfectly than can be done with a file and scraper or any other contrivance on the market. The Emery bands are perfected now, and ordinarily one band will finish one plate. With this you can do your work quicker, more accurately, and at the same time with less exertion than you can do without it. The Ideal Emery Arbor is in stock to fit all standard makes of Lathe, electric or foot power, including S. S. White, Redman, Sam'l A. Crocker & Co. and Lewis Lathe Heads and Electro Dental and Ritter Electric Lathe Heads.

If you have a lathe Head of a different kind than the above, send us a right-hand chuck and we will fit an arbor to it.

Price each - - - - - \$1.50

Emery Cloth Bands, per package of 50 .25

Emery Cloth Bands, 500 in one box, 1.75

Extra Rubber Heads, each - - - .10

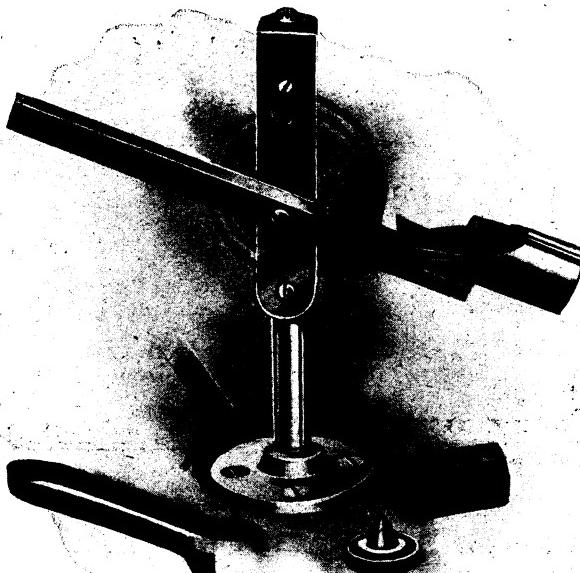
SAM'L A. CROCKER & CO.

35, 37 and 39 West Fifth Street,

CINCINNATI, OHIO.

TRADE SUPPLIED.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.



PATENTED

The Flannigan Centrifugal Machine

A SIMPLE ADAPTATION OF A PERFECT PRINCIPLE

Price, complete, \$12.00

Including two buckets, three melting trays,
sprue former, sprue wire and bucket tongs

It is generally conceded that the Centrifugal is the only perfect principle for casting. It requires no compressed air, has no leaky valves, requires no gas tank.

We guarantee this machine to cast small partial plates, bridge dummies, gold and Richmond crowns, and regulating appliance using gold, platinum alloy or silver.

Full directions with each machine.

Manufactured by

THE O'BRIEN WORTHEN CO.

Keokuk, Iowa

ST. LOUIS, Missouri

FOR SALE BY ALL DEALERS

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

Thomas J. Dee & Co.

**Gold and Silver Refiners
and Sweep Smelters** ↗ ↘

**67 and 69 Washington Street
CHICAGO, ILL.**

We are Large Refiners of Precious Metals and
we make a Specialty of Refining

**Bench Sweepings
Scrap Gold
Scrap Platinum
Gold Filings
Floor Sweepings
Old Rugs and
Old Carpets**

In Fact, Anything Containing Gold or Platinum.

**Prompt and Accurate Returns Made in Cash
or in Gold.**

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

**The Harvard Company
CANTON, OHIO, U. S. A.**



The
Largest
Manufacturers
in the
World of



**Dental Furniture
Electro Dental Appliances
Filling Materials**

Dental Chairs, Cabinets, Electric Engines, Fountain Cuspidors
Tables, Brackets, Electric Switchboards,
Compressed-Air Pumps, Tanks, Electric Hot-Air Syringes
Electric Mouth Lamps, Electric Sterilizers
Electric Gold Annealers, Electric Water Heaters
Electric Pyrometer Furnaces, Laboratory Work Benches
Lath Heads and Wheels.

Your office and laboratory completely equipped with
all HARVARD goods

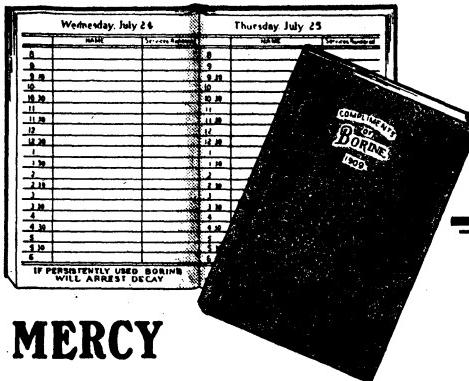
On Easy Monthly Payments or Liberal Cash Discount.

**Write for catalogue, prices and
terms.**

**The
Harvard
Company
Canton, O., U.S.A.**

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will
confer a favor upon both the Advertiser and the Journal.

AMERICAN DENTAL JOURNAL



ARE YOU AT THE MERCY OF YOUR MEMORY?

- ¶ Why cudgel your brain for a lost date or forgotten appointment?
 - ¶ Keep a Borine Appointment Book on your desk and you can't forget or mislay any important information.
 - ¶ It keeps your appointments, your memoranda, always at your fingers' ends. No hunts for lost scraps of paper, no trouble, no worry, no bother.

**THE 1909 BORINE APPOINTMENT BOOK
IS NOW READY FOR DELIVERY**

- ¶ It is as handsome as it is useful. Bound in a pebbled black cover, gold inlaid title. Contains 365 pages, a page for every day, conveniently ruled for every hour and half hour.
 - ¶ As high in quality as every other article that emanates from the Borine House.
 - ¶ Send 50c in coin or stamps to Borine Mfg. Co., 551 W. 42nd Street, New York, or to

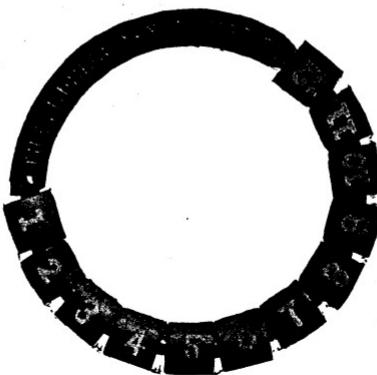
American Dental Journal

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

NEW SHADE GUIDE For ASCHER'S ARTIFICIAL ENAMEL

Accurate
Handsome
Indispensable

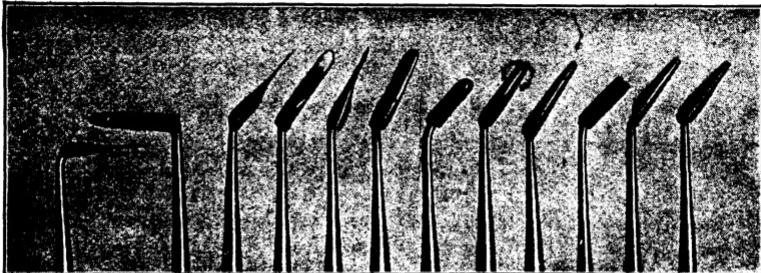
Convenient
Necessary
Cheap



A baked porcelain Shade Guide showing the twelve shades of Ascher's Artificial Enamel as it appears finished and under saliva. Additional shades will be supplied gratis and can be added at any time. Price \$1.00 postpaid or your dealer.

FOUND! A substantial, appropriate, lasting and cheap instrument for working Ascher's Artificial Enamel.

IDEAL TORTOISE SHELL POINTS.



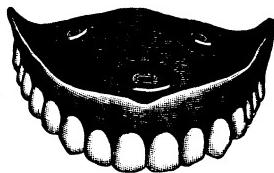
SUGGESTIONS FOR ANGLES IN MOUNTING POINTS

DIRECTIONS—These points are made from finest grade of tortoise, especially treated to make it stronger than any on the market. Mount points by melting gum shellac on tips of old instruments previously prepared. Press point slowly into tip; allow to harden. Holes in tips can be carefully lengthened if necessary. Instruments are not guaranteed against breakage, but will last a lifetime with ordinary care. Price Per Box (12 Points), \$3.00.

The Pinches Dental Mfg. Co.
118 Broadway, NEW YORK CITY

Chicago Branch: 3035 South Park Ave. St. Louis Branch: 617 Century Bldg

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.



DOCTOR

How many times have you wished for something to retain those flat cases?

Stop experimenting and use the "EUREKA" goods.

We mfg. all sizes for either upper or lower Dentures.

Sold by all the leading dealers at the following prices:—

Upper Denture \$2.00 per box of six suctions

Lower Denture 2.00 per box of three sets

Assorted (upper or lower) 2.00 per box

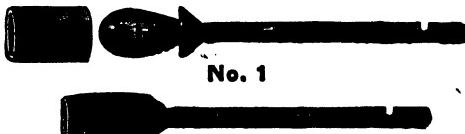
Full and simple directions with each box.

EUREKA SUCTION CO.

LOUDONVILLE, OHIO



Loaded with ammunition like the above, a bullet fired from my office, cannot miss its course to pierce rigid opinions that all dental advertising is quackery. These bullets carry facts with such force that defeat of any rank into which they are fired, is certain. These bullets are the result of dental advertising that is instructive—and a constant benefit to humanity. You will see more than a sham battle, if you send for the First Volley. More will follow without asking. "What's Been Said Without Asking" is yours for a cent, but more interesting than a "Y." 50c will bring you a sample ad and my booklet, "Others' Opinions About My Social-Business Relations." H. ELFERS, Dental Ad-writer, 6801 Lucerne Av., Cleveland, O. DESK "E"



No. 1

No. 2

TOOTH CLEANING MANDRELS

These are found very useful in cleaning teeth. Ordinary rubber tubing is used, giving you a fresh and clean piece in every case.

The illustration shows how the rubber is adjusted.

Dr. A. W. Harlan suggests and recommends the smaller size (No. 2). These Mandrels save time and money by the extreme service and by the rapid adjustment of the rubber tubes.

Price, with 6 inches of Tubing, 35 cents each.

C. L. FRAME DENTAL SUPPLY CO.

Successors to FRINK & YOUNG

607-8-9 MASONIC TEMPLE,

CHICAGO, ILL.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

NOTICE

If you have the least doubt as to the superior merit of Lavoris for the quick relief of Pyorrhea put the first case that comes to you, on it and compare results with anything you have ever used.

Antiseptics are all right and necessary, but it is the Zinc Chloride in Lavoris that gives such decided results and is attracting so much attention.

If you would like a liberal supply for your office or personal use, send us your professional card.

Lavoris Chemical Company
Minneapolis, Minn., U. S. A.

Cast Gold Inlays

Can be successfully accomplished only when the Frink & Young Co.'s wax and specially prepared Investing Compound are employed for the purpose.

Recommended by all makers of appliances, and all users of the

Cast Gold Inlay

Wax per box	- - - - -	.50
Compound per lb.	- - - - -	.25

C. L. Frame Dental Supply Co.

Successors to
FRINK & YOUNG CO.

Masonic Temple, Chicago, Illinois

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

Pressed Steel Aseptic Dental Cabinets

(PATENTED)

The latest addition to dental furnishings is found in the new pressed steel cabinets. These are constructed entirely of sheet steel, heavily enameled in white, and with the plate glass doors and shelves constitute an absolutely aseptic receptacle.

The use of wood is entirely abandoned, the bur and instrument racks being composed of crystal glass, while the trays for discs and strips are of molded aluminum.

There are no slide drawers in the cabinets, but in place of same there is a full complement of swinging trays. These are attached by means of heavily nickelized hinges, the latter harmonizing with the white enamel to the best advantage. Every inner surface of the cabinet, including the swinging trays, is enameled in white, and so, if soiled, is very easily and quickly cleansed.

The cabinet is virtually fire as well as burglar proof. Each one is provided with a locking device and key. The back is finished just the same as the front.

Description of Cabinet No. 502, Illustrated on Opposite Page.

In this model the medicine closet is divided by a sheet of plate glass, extending from the front to the back of the closet, which makes it possible to use one side for medicines and the other for sterilizing instruments, etc.

In back of each side of the medicine closet is inserted a mirror, which adds very materially to the appearance of the cabinet. The plate glass shelves are adjustable as in the other models.

The No. 502 Cabinet is provided with twelve of the swinging instrument trays as illustrated, also with two large swinging drawers for heavier goods and large closet, which may be used as a safe if desired.

The swinging instrument trays have been carefully subdivided to meet the requirements of the user and are equipped with three glass bur racks, with capacity for 15 dozen engine instruments, also with six crystal glass instrument racks with capacity for three dozen long-handle instruments and with two aluminum disc trays and one aluminum strip carrier.

The front edges of all swinging instrument trays as well as hinges are heavily nickel-plated and the projecting shelf above the lower set of trays is equipped with sheet of heavy plate glass as illustrated.

Price, Aseptic Cabinet No. 502, \$165.00

Write for any further particulars desired, also for illustrated catalogue of other styles of these cabinets.

FOR SALE BY:

C. L. Frame Dental Supply Co.

Successors to FRINK & YOUNG CO.

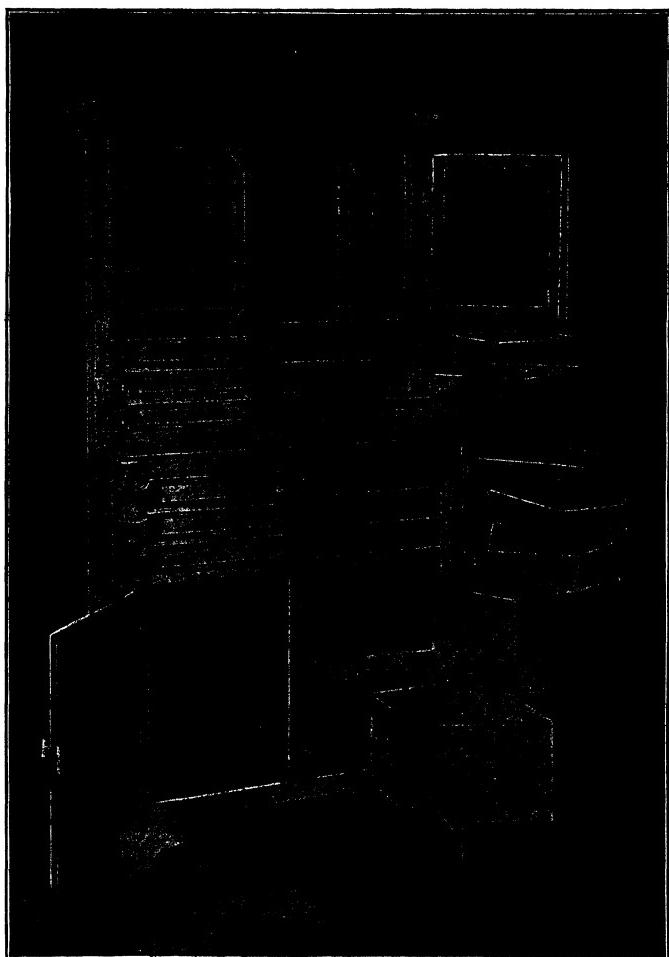
1301-1302 Masonic Temple

:: ::

CHICAGO

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

PRESSED STEEL
ASEPTIC DENTAL CABINET
(PATENTED)



Cabinet No. 502, Open.

The base of this cabinet measures 32½ inches wide by 20½ inches deep; the height over all is 5 feet 5 inches.
For detailed description see opposite page.

The first of these to be exhibited in Chicago is now on display in our salesroom. Visitors are cordially invited.

For Sale by

C. L. FRAME DENTAL SUPPLY CO.,

Successors to Frink & Young Co.
1301-1302 Masonic Temple, CHICAGO.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

Dr. V. C. Bell's T Tooth Brush

(An Anti-Pyorrhœa and Anti-Caries Brush)

The Only Real
Improvement in
Tooth Brushes
in a Century.

The Picture
Tells the Story.



Enables your patients to practice what you have been preaching for years.

Specially designed for MASSAGING the gums and BRUSHING the teeth UPWARDS and DOWNWARDS.

Why not INSIST that your patients use it.

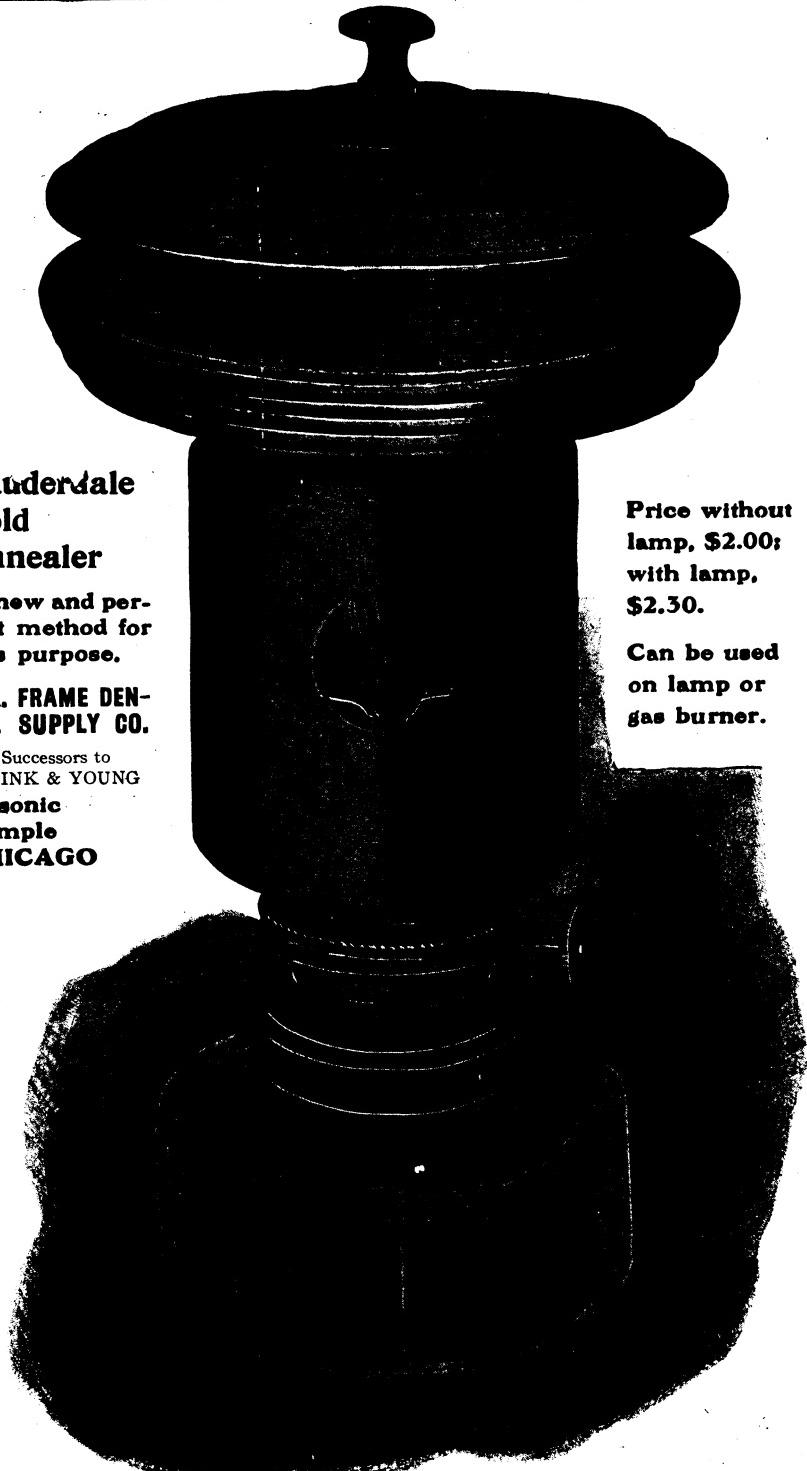
Your Druggist can obtain a supply from his jobber, from us direct or from Messrs. Frink and Young, Masonic Temple, Chicago, Ill.

Descriptive literature upon request.

**American Tooth Powder Co..
DISTRIBUTORS**

Bell Building, 699 Madison Ave., New York

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.



**Lauderdale
Gold
Annealer**

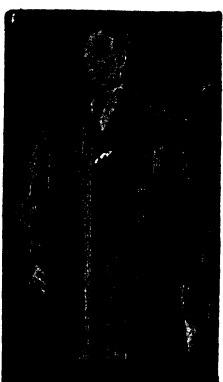
A new and per-
fect method for
this purpose.

**C. L. FRAME DEN-
TAL SUPPLY CO.**

Successors to
FRINK & YOUNG
**Masonic
Temple
CHICAGO**

Price without
lamp, \$2.00;
with lamp,
\$2.30.

Can be used
on lamp or
gas burner.



LOOK

at your neighbor. Don't he look
neat? Sure—he wears

"The Best"

COATS

It costs no more.

Send for samples and style book.

Office Coat Co.

254 E. Madison St., Chicago, Ill.

TRAUN'S PINK DENTAL RUBBER

There is just one thing which is essential in Pink Dental Rubber—that is naturalness.

That is the perfect pink color which best imitates the natural gums.

Our Pink Rubber is the best pink rubber made in America—nay, it is the best pink rubber made anywhere, it is superior to even the best reputed and highest priced imported kinds.

When we say our Pink is superior in every way to any other pink rubber made, we mean just that. We are prepared to stand by this statement without hedging or qualification.

The main thing in Pink Rubbers is the lifelike appearance. With our rubber a good gumlike shade can be obtained, even without solarizing. A few hours' exposure to sunlight, however, always improves the delicate tints.

More than that, it is strong—comparatively. Many of our customers find it is strong enough to be used for the entire plate—an advantage that will be manifest to every dentist. Other pinks cannot be so used—they are not strong enough. You must use them merely to give color to the face of the plate. You use stronger rubber for the base.

It is made in three colors, which supply every color needed by the dentist. These colors are called,

"Ideal" Pink, "Imperial" Pink, and "Maiden Blush" Pink.

They are packed in pound and half pound packages, and the prices are :

Ideal Pink (Light Shade), per pound, \$5.00.

Imperial Pink (Deep Rose), per pound, \$5.50.

Maiden Blush Pink (Extra Light Shade), per pound, \$6.00.

Perhaps you would like to see a sample of our Pink Dental Rubber before buying. We will send a sample sheet for 30 cents.

Traun's "Ideal" Base Rubber, . . . \$2.75 lb.

Traun's "Featherbone" Base Rubber, \$1.75 lb.

FREE.

A full price list with vulcanized samples will be sent free upon request.

**TRAUN RUBBER CO.
EXCELSIOR RUBBER WORKS,**

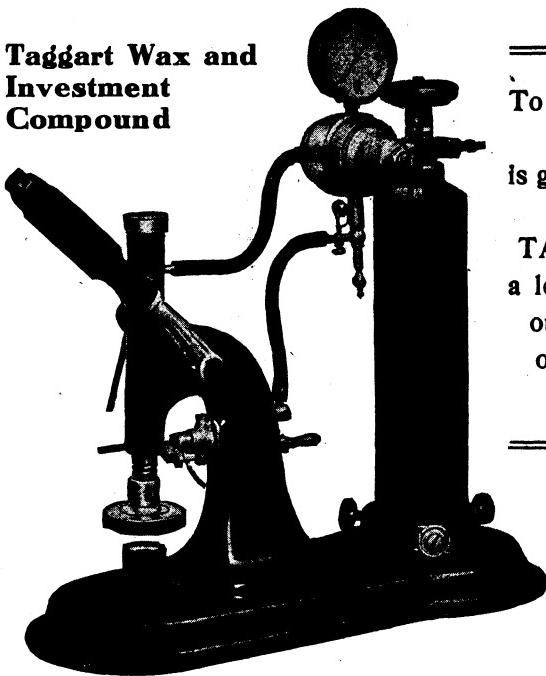
335 Broadway.

NEW YORK, U. S. A.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

The TAGGART CAST INLAY MACHINE

Taggart Wax and
Investment
Compound



To purchasers of this
MACHINE
is given the RIGHT to
the use of the
TAGGART patents,
a legal right which no
other manufacturer
of casting machines
can give

The Result of
2600 Recorded
Tests

All Dealers

¶ Failure in casting is often due to insufficient heat to melt gold rapidly without expanding or disintegrating plaster in investment.

¶ The Taggart Machine is equipped with a controllable nitrous oxide blowpipe which insures casting into practically a cold receptacle with gold properly melted or brought into a fluid condition in the quickest time.

¶ The Taggart Machine is also equipped with a pressure plate which hermetically seals the flask, while sustained pressure forces and holds gold into the smallest interstices during the cooling process.

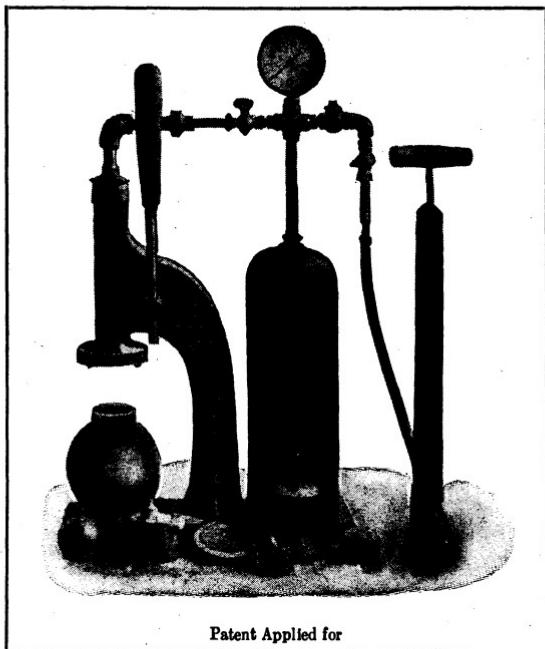
When you realize, through other machines failing to do the work, that the Taggart is indispensable, you pay a higher price by attempting to do without it than by buying it.

THE TAGGART CAST INLAY COMPANY

Masonic Temple : : Chicago

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

The Tracy Dental Casting Machine



THE most reliable and simple casting machine in existence for the casting of Inlays, Bridges and Aluminum Plates direct to the teeth, or aluminum base if so desired.

This machine will cast direct to any pin tooth or facing without cracking the tooth. A 14-tooth plate may be cast direct to teeth with a thinness equal to a swedged plate and with a far greater density.

The heating is done by the ordinary blow pipe and casting by compressed air; the tank having an air gauge enabling you to tell the exact poundage of air pressure, thereby eliminating all failures common to cheaper machines.

Practical demonstrations are given at my office at all times. Each machine is furnished complete as shown in cut. Two inlay flasks, two larger flasks for bridges and partial plates and one large flask for full plates.

PRICE—Cash, \$75.00; Time, \$80.00

DR. F. W. TRACY

159 Center Street

Phone Lincoln 1212

CHICAGO, ILL.

Your Credit is Good. With Us

We will furnish your office complete with Ritter's, American Cabinet Company's, A. C. Clarke & Co.'s, Lee S. Smith & Son Co.'s, Harvard Co.'s or other goods, on following terms:



\$100.00 to	\$215.00	—	\$10.00	Cash,	\$10.00	Per Month
215.00 to	350.00	—	15.00	"	10.00	"
350.00 to	500.00	—	25.00	"	15.00	"
500.00 to	600.00	—	50.00	"	20.00	"



Write for further information to

C. L. Frame Dental Supply Co.
Successors to FRINK & YOUNG CO.

MASONIC TEMPLE, CHICAGO

FOR CAST GOLD WORK

OVER 3,000° OF HEAT

SUCCESS of an Inlay Casting or other casting, by whatever method, depends largely upon right heating of the Flasks or Investment Rings, and an extremely liquid high-heat fuse of the gold or other metal. The ordinary Dental Blow Pipes, particularly Gasoline Blow Pipes, are often ineffective for this purpose, or else unnecessarily slow.

THE TURNER ALCOHOL BLOW PIPE

Nos. 100 and 8, are the ideal appliances to attain these desired ends, quickly, cleanly and economically. Their attractive feature is the fine

needle-pointed, non-oxidizing continuous blast flame, which is excellent for all kinds of soldering and fusing and other work in the laboratory requiring high temperature.

For Cast Gold Inlay Work, either of these appliances gives a satisfactory brush flame for drying and heating the investment and flask, and by regulating the valve to get the smaller flame, it

No. 8. Alcohol Blow Pipe
gives such a steady and intense blue flame that it is only a matter of a very few minutes until the gold is at the required liquid heat.

It will melt 25 per cent platinum solder, gold, silver and other metals used in mechanical dentistry.

The burner of either No. 8 or No. 100 Blow Pipe can be turned in any direction as illustrated, suited to various kinds of work. The flame can be regulated from practically nothing to four inches in length. A constant blast flame is produced without bellows and will burn continuously from four to five hours.

The air pressure pumped in the reservoir is not consumed in the burner but is for the purpose of forcing the fuel into the combustion chamber, and two or three pumpings are sufficient for the combustion of the fuel.

Either denatured wood or grain alcohol can be used in these Blow Pipes, although the best results are obtained from grain alcohol. The finish is highly polished nickel plated brass.

Shipping weight, 3 lbs. Reservoir, 4 inches high. Capacity, 1 pint.

Price, No. 100, each, \$5.00

Price, No. 8, each, \$8.00

For Sale by C. L. FRAME DENTAL SUPPLY CO.

Successors to FRINK & YOUNG CO.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

Bind Your Magazines

AT HOME

WITH AN

Arnold Security Binder

**REQUIRES NO TOOLS
PUNCHING OR
STITCHING**

- No. 1, for 6 popular Magazines of the size of Munsey, McClure's, etc. . . \$1.00
- No. 3, for 12 numbers of the Ladies' Home Journal \$1.50
- No. 10, for 26 numbers of the Sat. Eve. Post \$1.50
- No. 12, for 15 pieces of popular sheet music \$1.50
- No. 15, for 6 numbers of American Dental Journal . \$1.00**

SENT POST PAID
ANYWHERE

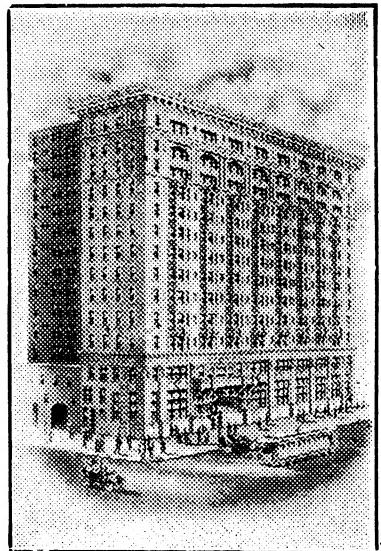
ENG. & SUPPLY CO.

OF MILWAUKEE

Sentinel Bldg. MILWAUKEE

NEW ORLEANS

**THE GRUNEWALD
LARGEST, NEWEST, BEST,
HOTEL IN THE SOUTH**



Cost over \$2,000,000.00

**400 Rooms
European Plan**

Rates: \$1.00 AND UPWARDS

**With Bath:
\$2 50 AND UPWARDS**

PYORRHEA

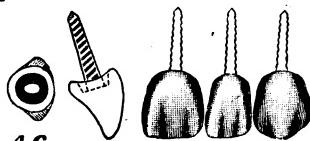
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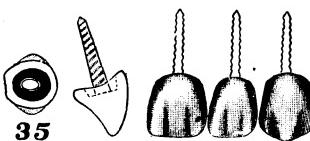
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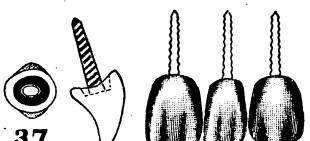
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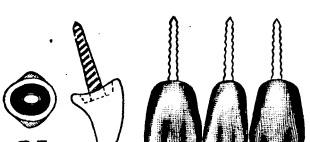
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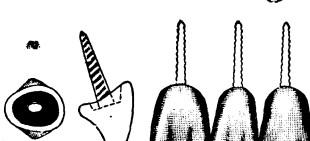
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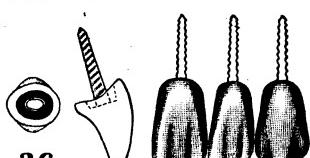
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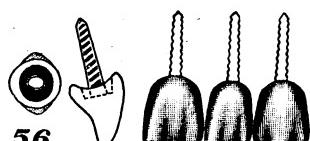
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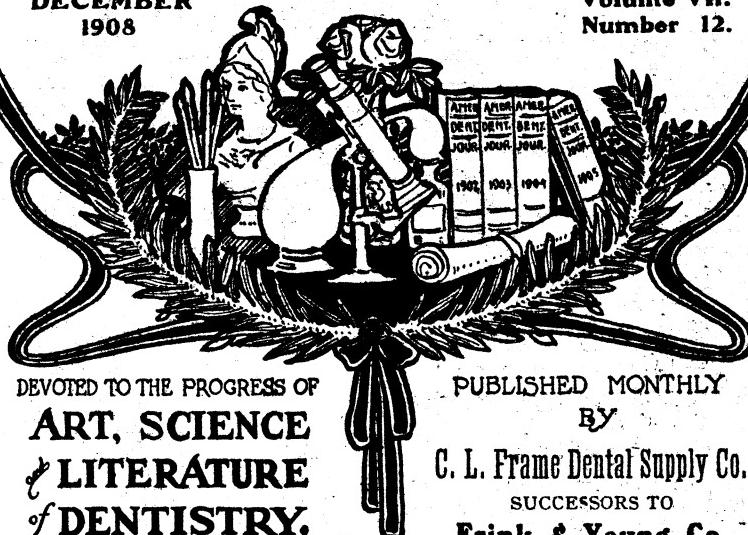
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